GENERAL VIEW

OF THE

AGRICULTURE

OF THE

COUNTY OF WORCESTER,

WITH

OBSERVATIONS ON THE MEANS OF ITS IMPROVEMENT.

BY WILLIAM THOMAS POMEROY,

OF FAIRWAY, NEAR HONITON, IN DEVONSHIRE.

DRAWN UP FOR THE CONSIDERATION OF

THE BOARD OF AGRICULTURE AND INTERNAL IMPROVEMENT.

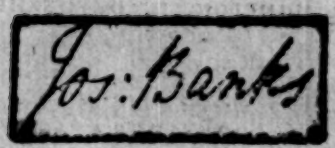
LONDON:

PRINTED BY B. MILLAN,

PRINTER TO HIS ROYAL HIGHNESS THE PRINCE OF WALES.

M.DCC.XCIV.

[ENTERED AT STATIONERS' HALL.]


Jos: Banks

TO THE READER.

IT is requested that this paper may be returned to the Board of Agriculture, at its Office in London, with any additional Remarks and Observations which may occur on the perusal, written on the Margin, *as soon as may be convenient.*

It is hardly necessary to add, that the Board does not consider itself responsible for any fact or observation contained in this Report, which, at present, is printed and circulated, for the purpose merely of procuring farther information, respecting the Husbandry of this District, and of enabling every one to contribute his mite to the improvement of the country.

The Board has adopted the same plan in regard to all the other Counties in the United Kingdom; and will be happy to give every assistance in its power, to any person who may be desirous of improving his breed of Cattle, Sheep, &c. or of trying any useful Experiment in Husbandry.

London, December 1794.

COUNTY OF WORCESTER.

SITUATION AND SURFACE.

THE county of Worcester is bounded on the east by Warwickshire, on the west by Herefordshire and Shropshire, on the north by Staffordshire, and on the south by Gloucestershire. It is supposed to contain about 540,000 acres.

The face of this county, when viewed from any of the surrounding eminences, approaches rather that of a plain; the gentle slopes and risings to the east and west of Worcester, remaining scarcely any longer discernible. The state of its cultivation appears to very great advantage, as there are no tracts of any considerable extent, so barren, or so totally neglected, as to be without an agreeable, and profitable verdure. On a nearer view, from the central hill, which rises more particularly to the east of that city, a most beautiful landscape presents itself: the whole of the back ground, which, at its greatest distance, does not exceed twelve, and no where approaches nearer than eight miles (allowing something for the openings to the south-west and north), appears to be one continuation of noble hills; forming, as it were, the frame of the delightful picture that presents itself in the centre, diversified with all the beauties of hill and dale, wood and water. If the Aberley and Whitley hills occasion some irregularity in the frame, they will scarcely be thought to take off from the beauty of the piece; these, and the adjoining hills, rising with a bold front, and most of them cultivated

vated to their summits, recall to the mind the enthusiastic description of Italy; and the sheep, hanging as it were, from the brows of others, illustrate the much admired idea of the Roman bard.

SOIL.

THE soil is various: to the north of Worcester, which is situated nearly in the centre of the county, it chiefly consists of rich loamy sand, with a small proportion of gravel; there is some very light sand; a few spots of clay; of black peat earth the same; but chiefly inclining towards the east. In this quarter (the east) the prevailing soil is, for the most part, a strong clay. The waste land, which is very considerable, in general a deep black peat earth. To the south, between Worcester and the Vale of Evesham, the soil is partly of red marl, and part strong loamy clay; other parts sandy loam; and there is a small vein of land which partakes of each of these qualities; the sub-soil, more especially under the second division, lime-stone. In the Vale, the soil is particularly deep, of a darkish colour earth, with a sub-stratum of strong clay and some gravel. Beyond this, on the confines of the county, and in the small detached parts, including the Cotswold Hills, a lime-stone prevails on the upper land, and a rich loam on the lower. To the south, between Worcester and Malvern, the general character of the soil, is a clay, mixed with gravel in different proportions; the former prevailing in the lower, and the latter in the higher situations. To the left of this line, including Malvern Chase, a deep surface of clay is found in some places; in others, a rich loam, inclining to sand; sub-stratum supposed to be marl. To the right, till we approach a central point between the west and north, the proportion of clay increases gradually, till at

last

last, a strong clay occurs; this again becomes gradually more gravelly, till it joins the light sands on the north. Below, partly marl, partly soft sandy stone, with some lime-stone, is found. In each of these districts, some very rocky land, and in most, some loose stony soil, or what is here called stone brush, or brash, is met with; but no where are there any traces of flint or chalk.

CLIMATE.

THE air is temperate; even on its highest situations, it is not so bleak as to considerably impede vegetation; nor are there any extensive tracts in the low lands, of boggy soil, to injure it by their exhalations.

MODE OF OCCUPATION.

THE estates are, in general, tenanted, and mostly by tenants at will, with no other restrictions but those which custom has introduced. The landlords appear, in general, to have great objections to granting leases: when granted, they chiefly are what are called running leases, for twenty-one years, determinable every seven.

The farms are small, from 40l. to 300l. a year; there are certainly more under the former, than above the latter value. The number of gentlemen who occupy land, has increased considerably of late; and some there are, who hold forth very laudable examples of experimental improvement.

The land, if the waste be considered as a part of the pasturage, is, probably, very nearly divided between that and husbandry.

GRASSES.

THE grasses chiefly cultivated to prepare pasture lands, are the red and white trefoil, with a mixture of natural grass-seeds; but very little, with two or three exceptions, is going on at present in this way.

Laying down grass land.—The following excellent mode of laying down grass land, is adopted by Mr. WAKEMAN, of Buckford. Having prepared the land by a good summer fallow, of at least three ploughings, he provides a collection of the choicest of the grass-seeds which are found to flourish most upon the places adjoining to the land intended to be laid down. These seeds are obtained in the proper season of the year, at a small expence. The sorts principally made use of, are the *anthoxarothum odosatum*, the *poas trivialis pratensis et annua*, the *alopecurus pratensis*, the *cynosurus cristalus*, and the white, red, and yellow *trifoliums*, adding to the whole mixture a small quantity of the *lolium perenne*. After having sown the barley, these seeds are combed in with a *light* pair of harrows. By this method, the ground is immediately stocked with native grasses, without waiting years for their spontaneous production. In the winter of the second year, the seeds are covered with a meliorated compost.

LIVE STOCK.

SHEEP, bullocks, horses and pigs, are the stock: of the first species, by far the greatest part are a small sort of sheep, without horns, and with mottled faces, originally from Wales. They are interspersed throughout the county, and occupy almost universally the waste lands. In point of number, those called the Ross sheep, stand the next; most of which are brought

brought out of Herefordshire, though they are now bred in the western parts of this county: they are short legged, short, but particularly broad, on the back, without horns; their fleeces, for fineness, are supposed to stand unrivalled throughout the kingdom.

There are a breed peculiar to the Cotswold Hills, part of which are in Worcestershire; these are very general in the southern parts; they are without horns, long woolled, and of large size; having broad loins and full thigh, but rather light in their fore quarters. One cross of the Dishly sort, to add to the Cotswold the principal, or, according to some, the only perfection of the Leicestershire, *a good fore quarter*, is found to answer well; but a second cross is said to be injurious: it diminishes the size of the sheep, and the quantity of wool. The sheep of the first cross, when two years and a half old, will weigh from 36 to 40lb. per quarter; the quantity of wool shorn from each sheep, runs from 11 to 14lb. which wool, in 1793, sold at 1l. per tod, of 28lb. to the tod.

There are a few of the Leicestershire breed; their number increasing. Some of the Wiltshire are also introduced; and on the eastern side, the Warwickshire breed prevails.

The bullocks, on the western side, are chiefly of the Herefordshire breed; Staffordshire furnishes some, and indeed, all the adjoining counties. The Earl of COVENTRY has introduced the Holderness breed, with great success; his Lordship's tenant, at Mitton, has some from Devonshire, but they are not of the true breed of that county.

The breed of horses is chiefly confined to those sorts that may be useful in the cultivation of the land; they are, however, much heavier, and of course slower, than appear necessary for that purpose. Perhaps the general construction of the ploughs, and the unwieldy weight of the waggons, together with the badness of many of the parochial roads, may be thought to render them necessary. From the num-

ber of horses kept in Worcestershire, and the quantity of food they devour, it is said that they consume two-thirds of the produce of the land.

The great bar to the improvement of stock in general, is the little attention paid by most, to keep the different breeds of each species distinct.

WATERING LAND.

This beneficial practice has not been much attended to, nor is it generally well understood. The most considerable experiment in this way, has been made in the neighbourhood of Kidderminster, on some farms belonging to the Foley family, which has been attended with very great advantage*; nor have the others hitherto made, proved less successful. From the general aspect of the county, and the numerous brooks and water courses with which it abounds, there is no doubt that this improvement might be carried on to a very considerable extent.

CROPS.

Of the land appropriated to husbandry, nearly an equal quantity is employed in the production of wheat, and barley; rye is likewise sown on the light soils, chiefly to be grazed by sheep; the different kinds of pulse are also cultivated; vetches, both summer and winter, are common; sainfoin has been raised hitherto but in small quantities; oats are sown sparingly, under an idea that they impoverish the land; hemp and flax are likewise grown; but chiefly on small tracts, occupied by little proprietors; a general opinion

* See the Appendix, No. I.

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prevailing, though unjustly, that these also impoverish the soil: the unjustness of this opinion, so far as it relates to flax, is asserted most decidedly, and from a very considerable experience. Except in the common fields, no particular rotation of crops prevail: the peculiar circumstances of the seasons, &c. seem to determine, and ought to decide this point.

Clover and turnips are generally cultivated; the latter on the light soils; more especially, where proper attention has been paid to hoeing, they are universally allowed to be the greatest improvement that has been introduced for a series of years. Clover is likewise found to answer very well, and almost always immediately precedes wheat, which is generally sown on what is here termed clover sward, and applied to land occupying clover, after having been grazed one whole summer, and in the autumn broken up for wheat. Fallowing is practised.

MANURES.

THE principal manures are, the production of the stable, farm-yard, and lime kiln, judiciously applied by good farmers, according to the respective qualities of the soil; the latter of these, however, is generally spread over the land without any previous mixture, a habit which requires regulation. Horn-shavings, leather-shreds, ashes, soot, and offal salt from the works at Droitwich, are likewise used. By some, more attention has latterly been paid to making dung-hills, than formerly: soil obtained from ditches, and marl, where opportunity offers, are added, and these are frequently mixed, by turning them together.

INSTRUMENTS OF HUSBANDRY.

THE plough is said to have undergone considerable alteration within these last twenty years. The one in general use, at present, is the hammock plough. Of such as are peculiar to the county, the double plough, which is said to be a native, is still confined to the lighter soils, to the north. A second, is the string plough, composed chiefly of wood; its beam crooked, body long and weighty: this, as far as relates to general use, is now almost exploded; it is, however, still found convenient on the deep red soils intended for hop-grounds, on the Teme side, which are prepared for that purpose as follows:—Two of these ploughs, with a man and boy to each team, are employed, following each other; in every other respect the same, they are differently furnished with iron work; the first, which takes off the sod from two to four inches deep, has the wing (here called the feather) of its share extended, and formed into an edge, which terminates with its point on the right hand side; in this position, it separates the upper from the under roots of the grass. In this plough, particular attention to the edge of the coulter is also paid, that the undermined turf may be so regularly cut, and equally divided, on the surface, as to afford the shield-board, which follows, an easy opportunity of raising it on its edge, and then laying it flat on its back in the furrow—in that which follows, both the share and coulter resemble those which (here) are in common use, with the point of the former tending a little downward; this following, raises the soil from a considerable depth, and covers the whole. A third, is the large straight heavy plough, more especially peculiar to the Vale of Evesham; rather long in the body, and without wheels. On the Cotswold Hills, a plough with one wheel is seen, much on the same construction as those met with in Devonshire, and other western counties. At Cutsden,

den, considered as part of these hills, oxen are worked two a-breast, a circumstance which seldom occurs in this county. Most of the modern improvements are partially adopted on the lighter soils, but cannot be considered as making very rapid progress towards a more general use. From the number of heavy horses employed, particularly with the hammock plough, a very fair inference may be drawn, that there is great room for improvement.

The harrows are on the usual construction; the waggons and carts are remarkably heavy, those on the Cotswold Hills excepted, which are considerably lighter.

The sickle for cutting wheat, is said to have been introduced about the year 1750; it is now in general use. The husbandman's tools, on the whole, seem to require much alteration and improvement.

SEED-TIME, AND HARVEST.

THE seed-time for wheat, varies, from the beginning of October to the end of December—for barley, from the middle of March to the beginning of May—pulse, the latter end of February and beginning of March—winter vetches, the latter end of September; those for summer, March, April, and beginning of May; the former are generally found to answer best.

The harvest season, is from the last week in July to the end of August; but the fickleness of the weather frequently drags it on to a greater length.

INCLOSURES.

THE lands are in general inclosed: here are, however, some considerable tracts in open fields. The most extensive

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are in the neighbourhood of Bredon, Ripple, and to the east of Worcester. The advantages from inclosing common fields, have been evidently very considerable; some few objections have been started, but they do not appear, on the whole, to have considerable weight: the rent has always risen, and mostly in a very great proportion; the increase of produce is very great, the value of stock has advanced almost beyond conception; in one parish alone, where the quantity inclosed has been pretty considerable, it is stated on unquestionable authority, to have amounted, in sheep and wool only, to full 1000l. a year. The improvements that may be made in stock in general, if properly attended to, are too obvious to be insisted on: it may be said in general terms, that there is but one opinion throughout the county on this subject; indeed it is in inclosures alone, that any improvement in the line of breeding in general can be made.

The average size of the inclosures, is from fourteen to twenty acres, but varying considerably according to the size of the farms; the greatest part of the old inclosures is under this estimate.

The new fences are chiefly made with hawthorn, secured by post and rails; on the Bredon and Cotswold Hills they are of stone. The expence of making them is difficult to judge of with accuracy; but from the supply of materials, which are in most parts plentiful, it may be deemed moderate.

If a doubt is admitted, whether inclosures increase or decrease population, it must depend in this, as in other counties, on the nature of the land inclosed. Where waste land is inclosed, it must obviously increase population; there can only be a doubt, when the question arises respecting common fields. The inclosures in this county have been chiefly of the latter sort, and yet the population is admitted to have increased. Considerable inclosures have been made of late, some by authority of Parliament, others by mutual consent of the parties interested in them; more would certainly take

place,

place, were it not for the expence which attends the procuring Acts of Parliament for that purpose. A division of some of the common fields and meadows is under consideration.

WASTE LANDS.

The waste lands in this county, contain, at a very low computation, from 10 to 20,000 acres: the medium 15,000. They are in general depastured by a miserable breed of sheep, belonging to the adjoining cottagers, and occupiers, placed there for the sake of their fleeces, the meat of which seldom reaches the market, a third fleece being mostly the last return they live to make.

Most of the common, or waste land, is capable of being converted into tillage of the first quality; of this description, Malvern Chase, extending some thousands of acres, and enriched by the soil and manure washed down from the extensive sheep walks on the adjoining hills, and above all, well supplied with the waters of their numerous springs, stands foremost; nor is there in this county (rocks excepted) a part not accessible to the plough, but would produce most excellent timber. As to the present mode of commonage, it is so radically bad, as not to admit of improvement, without a total alteration.

LABOURERS.

The hours of labour are, from six in the morning to six in the evening, during the summer; in some parts, they are from five till seven, with a proportionate increase of pay:—in winter, from day-break till the close of the evening. During the harvest months, there are no fixed hours of beginning,

ning, or leaving work. The average price of labour, with drink (beer, cyder, or perry), is a shilling a day, or fourteen-pence without, at the choice of the person employed. A true idea of the expence of furnishing drink, will not be formed from the proportion the two prices bear to each other, or from what is usual in most other parts: two gallons a day is now pretty generally considered as the fixed allowance to each man. In the harvest months, there is no restriction. In extenuation of this abuse, it is said that a part is taken home to the families; but this, when it happens, may be set down as an exception to general custom. Hired servants have the same.

The price of labour, mentioned above, is to be understood as that of common day-labourers: those who are qualified to undertake, and are entrusted with the care of any particular part of the business, such as the management of feeding cattle, or the care of sheep, receive from ten to twelve shillings a week. Women have six-pence with, or eight-pence without drink. The price of piece-work varies in different parts of the county; the customary daily wages being the rule by which it appears to be regulated. The yearly wages of an able man servant, are from 5l. to 7l. a year, exclusive of diet, washing and lodging; some few, and those chiefly such as are entrusted with the care of the team horses employed on the farm, receive from eight to twelve guineas. Women servants, from 50s. to 4l.

DRAINING.

TAKING the county at large, and considering its advantages in that respect, draining is certainly very much neglected. All the principal farmers are, however, now convinced of its great use, and several have, within the last twenty

twenty years, attempted something in this way; but for want of further information, and a proper discrimination of the nature of the land, and above all, from the little attention paid to the situation and course of the springs, many have not succeeded so well, as by their exertions they deserved to do.

In speaking of under drains, it may be thought right to mention, that various experiments have been made at Ewell-grange, the seat of the Earl of PLYMOUTH, and in that neighbourhood; but that by boring (after ELKINGTON's method) deserves to be most particularly noticed, which indeed in such situations (viz. low, fenny, or boggy lands), seems to supersede the use of every other. The drain to be bored in, is thus made:—the trench is begun almost level with the surface, in that part from which the water can be most certainly and conveniently carried off. In determining its direction, great attention is paid to the situation of the bogs, and to the rising grounds (or perhaps pools) from which they (the bogs) are likely to proceed; the trench is then continued on, varying from a dead level only so much as may be of service in promoting the discharge of the water; when sufficiently advanced into the piece to be drained, an attempt by boring is made, to discover the spring; if successful, and the water is judged to issue in a proper quantity, this part of the business is completed; otherwise the trench (or its necessary branches) is continued on, and the boring repeated at intervals, till it succeeds. The drain is formed of brick made for the purpose, called gutter brick. The brick, the pebbles, and the faggots, which form the drains, at the bottom of the trenches in which they are used, are covered in the usual manner with earth. Some of the old under-ground drains are also made with brick; others with small pebble stones, where they are in plenty; and some, with small faggots of brush-wood.

Of the open drains, that made use of at Croome, the seat of the Earl of COVENTRY, is the only one deserving notice;

for a description of which, and an account of the great success that has attended it, reference may be had to Mr. DARKS's answers to the queries proposed by the Board (see the Appendix, No. 2), in which many interesting remarks will be found, which do credit to their author.

PARING AND BURNING.

IN Worcestershire, paring and burning has not been much practised, at least, not sufficiently to form a decided opinion of its utility, as it is not by the advantage gained in the crops that immediately succeed, we ought to judge of its permanent use. It has its advocates here; but in Devonshire, where the experiment has been very fully made, on an extensive scale, it is almost given up. A distinction when it will be useful, and when otherwise, may perhaps be made—when old lands are first broken up, on which much is found that will not readily decay, the advantage is obvious; in other situations, it may occasionally be used, though that should be seldom. The frequent practice must undoubtedly, by wasting the soil, prove prejudicial.

WOODS, &c.

THE extensive woods and forests of this county, so very considerable in early times, have almost disappeared. Feckenham Forest has sunk entirely under the continued demands of the salt works at Droitwich; these, however, having been worked for years with coal, that demand ceases. The woods of Hagley and Uffmore, are still of considerable extent, and some idea of the former abundance may be formed as yet, on those parts which border on Herefordshire. Through a considerable

siderable part of the county, small tracts of woodlands are frequent, and they furnish timber, chiefly oak and ash, with some beech, of excellent quality. The hedge-rows are every where crowded with elm, and though the present custom of lopping and pollarding must certainly injure their growth, they often produce timber of considerable dimensions. Elm is considered as the principal growth; there is, however, in many parts, as fine oak and ash as the kingdom produces.—The principal uses peculiar to this county, to which the underwood is applied, are hop-poles, and the making of charcoal for the iron works.

The smaller tracts of woodland are chiefly inclosed, and under the management of the proprietors; some of the larger are thrown open, after a certain number of years from the last cutting; and the freeholders claim the privilege of turning in horses, horned cattle, &c. The injury this practice must do the young timber trees, is very great; nor can the advantage to those who claim the privilege, in any degree be thought to compensate it.

PRICE OF PROVISIONS.

Provisions of all kinds are more than doubled in price within the last forty years; and the same causes which have produced this rise, still continuing, there is little prospect of their becoming cheaper. A very principal one, is the great increase of manufactories in this, and the adjoining counties, more particularly those of Warwickshire and Staffordshire. A second, and perhaps of equal consequence, is the encroachment luxury has made on the mode of living of the inhabitants in general, from which even the farmer is not exempted. There are employed every week, on an average, from twenty to thirty horses, in conveying the productions of the butter and

and poultry-market, from Worcester alone, for the consumption of Birmingham and its neighbourhood, besides what is procured from the markets of Droitwich and Bromsgrove. Those employed in carrying vegetables, and other produce, raised by the Evesham gardeners, are still more numerous. Provisions are not, however, on the whole, particularly dear, the certainty of a ready sale, being a sufficient inducement to most of the farmers on the confines of the counties of Gloucester and Hereford, to give a preference to this market; where the average price of butter in summer is nine-pence per pound, in winter, twelve-pence; good family cheese is seldom under five-pence; beef, those parts which are more particularly called for by the labouring part of the inhabitants, may in general be had in quantities, from three-pence half-penny to four-pence, and mutton four-pence half-penny; veal, for a considerable part of the season, four-pence, and sometimes under. The price of wheat (at Worcester, where the measure is eight gallons and an half), with all the other productions of the corn-market, have varied very considerably within the last seven years; at present, many of the articles run remarkably high: the price of wheat 7s. 6d. to 8s. 2d.; barley 4s. 6d. to 5s.; oats 3s. 6d. to 4s. 6d.; horse-beans 6s. 2d. to 7s. 2d.; pease 6s. 10d. to 7s. 4d.; malt 7s. 6d.; hops of the best gathering 3l. 10s. to 5l. The price of cyder and perry is extremely fluctuating. It is necessary to remark, that each town has its peculiar corn measure, and the price varies accordingly; the Worcester bushel is said to be the least.

ROADS.

THE public roads are, in the greatest part of the county, good; in most, tolerable, and every where improving. As much cannot be said altogether of the parochial roads; these, however,

however, are also improving daily. Where new ones are made, the much approved method of rounding them, is generally adopted; in some parts, from the badness of the materials (a soft stone), and in others, from the heavy debts already contracted, the progress cannot be every where equally rapid; but these, and every other obstacle, will probably give way to the general spirit of exertion that is gone forth. The county, in this particular, is much indebted to some of its leading characters; and, it is presumed, their example in this, as in several other instances, will in time have its full effect.

Road Club.—The laudable exertions of the society of the Vale of Evesham, for the improvement of the road in their neighbourhood, must be noticed.—They have the pleasure of seeing their district assume a new face under their auspices; and instead of its being studiously avoided, as formerly, from the inconvenience, and even danger of travelling, they have now to congratulate themselves and the public, on a very safe and pleasant communication. An agreeable embellishment, if it may not be called improvement, and not very expensive, is the practice they have adopted, of affixing the name, on some conspicuous place, at the entrance of every village. The regulations of this very laudable institution, will be found in the Appendix, No. 4. Similar establishments, followed up by the same perseverance, would undoubtedly be attended with similar success. One circumstance does not appear to be in general sufficiently attended to, viz. that ditches on the side of roads, unless they are kept clean, and the water has proper vent, do considerable injury, if the water is suffered to stagnate in them. Where possible, it is advisable to keep them quite dry.

FARM HOUSES.

It appears to have been formerly a very general custom, to build farm-houses in low situations; undoubtedly for the convenience of water. Most of the old buildings continue in such places; and as it is but seldom that the whole require to be rebuilt at once, it will probably be some time before they are in general extricated. The inconveniences, and even losses, are however so great, that no small saving can counterbalance them. It cannot be necessary to point out to those who are interested in this subject, what they are, nor the advantages of removing their buildings to more elevated spots, and where the land will of course be sounder. One circumstance, however, as not being so immediately connected with the general system of this district, it may be right to mention, and that is, the opportunity obtained, of conveying by rain, melted snow, or streams, naturally descending from the still higher grounds, in winter, the most valuable parts of the manure produced in the farm-yard, over the adjoining lands; an acquisition, the importance of which is not easily conceived by those who have not seen it practised. Some of the old farm houses are well built, and convenient; most of the newly erected ones have the same advantages, and are in general well situated; some of which may be said even to grace the county, and as such, may be classed with its greatest modern improvements.

A great deficiency in the offices of the middling and lower sized farms, is the want of sheds for cattle in winter: besides the quantity of fodder they destroy, and the mischief they receive, from being exposed to the inclemency of the weather, it is not unusual to observe many acres round the yard, very materially injured by their constant treading. This grievance, particularly in the low situations so frequent in this, and many other counties, is certainly of such consequence, as to deserve

serve the most serious attention. The water with which the farm-yards are almost universally supplied, is a stagnant pool in the lower part of them, depending mostly on rain for its supply; by its situation, it receives also the greatest part of the filth, as it drains from the house and from the dung in the surrounding offices and yard; the water is of course always very foul, and often offensive—that its use is attended with any prejudice to cattle, has not been ascertained. A circumstance, however, so abhorrent to nature, would seem to admit of alteration for the better. It may be with truth asserted, that there are but few situations, which, under the present improved management of water, might not be amply supplied with a running stream, so as entirely to supersede the present mode of collecting large quantities of stagnant water in the yards, on different parts of the farms, and in the highways.

LEASES.

It has been observed, that there is an objection among the proprietors in general of this county, to the granting of leases. An ill-grounded jealousy on the part of the landlord, and the frequent disputes, and law-suits, occasioned by the present vague mode of drawing up these covenants, and the difficulty or trouble of drawing them up in such manner, as to adapt them properly to the peculiar circumstances of each farm, are the principal source of this opposition. Those granted, are generally for twenty-one years, determinable every seven, at the option of either party; some for shorter terms, and determinable at shorter periods. The land-tax and repairs are paid by the landlord. He reserves the timber trees. The restrictions by which the tenant is bound, are, not to break up the meadow or old pasture grounds; not to sow more than a certain quantity of the tillage, and that proportioned to what he

may be supposed to be able to manure properly with the produce of the estate; to spend all the hay, straw, green fodder, and dung, on the premises; or if hay or straw are sold, to procure a proportionate quantity in return, and to leave the farm in a proper course of husbandry. These are the general clauses by which the tenant is bound. Others, in some instances, are introduced, adapted to the peculiar circumstances of the estate, but they are not such as can convey general information.

That leases, and those for a long term, must tend to the improvement of agriculture, is the opinion of the occupiers in general, and of many proprietors: where any considerable improvements, such as draining, watering, marling, planting, &c. are to be made by the tenant, *they are absolutely necessary*; and it appears the objection on the part of the landlords might be remedied. That state of independence in which a long lease is supposed to place the tenant, is no longer a grievance, when he does his duty by the farm; it is from the negligent or dishonest occupier alone, that any thing is to be apprehended; and, *could the present tedious and expensive course necessary to eject the tenant, not complying with the conditions of this agreement, be altered, and the proceedings be conducted in a more summary way*—perhaps by a verdict of twelve neighbours, before an adjoining justice—this difficulty might be wholly removed. Those misunderstandings also, which arise where nothing dishonest is intended by either party, would be greatly diminished, were the simple language of common conversation introduced, instead of the present circuitous and intricate language of the law. The difficulty and trouble of framing leases adapted to the peculiar circumstances of each farm, would not, perhaps, be found so great, as at first sight they may appear to be: one form, drawn up by a person well acquainted with the business of a neighbourhood, might, with little variation, serve a considerable district. The principal source of this objection seems to be this, that

leases

leases are, in general, drawn up by professional gentlemen, who, having but few opportunities of more minute information, are under the necessity of copying from those who have gone before them.

As no sufficient evidence has been hitherto adduced, to establish the principle, that fallowing is not necessary to secure a continuation of full crops, the clause, obliging the tenant to fallow a due proportion of the tillage, is certainly a very necessary one, on the part of the proprietor, and will in time be found equally advantageous to the occupier. To fix an absolute rotation of crops, must subject the tenant to inconvenience, and occasionally, considerable loss. The number of years for which the convertible land shall be grazed, may be fixed with more precision; but even by this, from the uncertainty of the seasons, he may be liable to considerable injury.

MANUFACTURES.

THE principal manufacture of this county, is that of gloves; carried on chiefly at Worcester. It employs a considerable number of men, and a much larger proportion of the working women and girls of the city, and county round to the extent of seven or eight miles, from the age of eight or nine, and upwards. Any calculation of their number, must be extremely vague; it is, however, at a certainty so great, as to be severely felt through the neighbourhood.

The hands employed at Worcester, in the china, and carpet manufactories, are not very numerous; those employed at Kidderminster, in the latter business, are considerably more so. The carpet manufactory may be properly considered as a part of the œconomy of that town and neighbourhood. On the confines of Warwickshire and Staffordshire,

many of the lower class are employed in the manufacture of nails; others, in that of needles and fish-hooks.

The manufacture of salt at Droitwich, is chiefly deserving notice, from the immense revenue, compared with the size of the place. It pays annually to government, the lowest average, about per ann. That of glass, at Stourbridge, is very considerable, and employs many hands. There are also some iron works and collieries. Upon the whole, though this county is far inferior in its manufactories, to some of the adjoining ones, the numbers engaged in this line, bears no small proportion in that of its inhabitants; and their effect on its markets, and the value of the landed property, must be very great; nor does there appear to be room to doubt, but that they have uniformly operated to the advantage of agriculture*. They are often said to have increased the poor-rates; perhaps they may, in particular instances, but when considered on a larger scale, that will not, probably, be found to be the case. Had the present custom of abolishing cottages and small farms, prevailed to the same degree it does now, what would have become of one half of the former inhabitants of the country, if our growing manufactories had not received, and supported them? Either the population of the country must have sunk, an evil which God avert! or the price of labour must have been reduced so low, as to have been scarcely adequate to the support of the labourer.

COMMERCE.

The produce exported, is chiefly fruit, cyder, perry, and hops; a considerable number of fat cattle, sheep, and hogs,

* One great effect which manufactures have upon agriculture, is that of raising the price of meadow land; and hence much arable land is necessarily converted into pasture.

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are also sent to London, and the large manufacturing towns of the counties of Warwick and Stafford. The quantity of wool is estimated at two thousand packs, of 240lb. each, value from 10l. to 16l. per pack. But the principal source of wealth, in its commerce with the different parts of this, and other countries, arises from its fruit, perry, cyder, and hops. The former is now growing into an article of considerable consequence, and deserves particular attention, more especially as the demand for it in the large manufacturing towns of the north, and all the intermediate country, increasing yearly, promises a certain and ample recompense for the greatest exertions that can be made in this branch of its rural œconomy. Some idea may be formed, from the following circumstances, of the quantity exported, and the price it bears. The average tonnage of fruit sent by water into the north, for the last three years, amounts to fifteen hundred tons; (in the year 1791 it exceeded two thousand and ninety-four tons), each ton weighing equal to fifteen horse pots, the measure by which it is commonly sold, making twenty-two thousand five hundred pots. The pot holds about five pecks.

The fruit sold in Worcester market, is allowed to amount to (and the circumstance is fully confirmed, by the rent given for the toll paid on it) one thousand pots per week, on an average of the last five months of the year.

In ascertaining the value of the produce, as an article of commerce, the two preceding months may be safely included; for though the number in these certainly falls short of this estimate, the superior value of the early fruits will amply compensate for the deficiency. Seven months, or thirty weeks, at one thousand pots per week, give thirty thousand—supposing one half of this quantity to be sent by water, and making part of the home consumption, there will remain fifteen thousand pots not accounted for in the estimate of the water carriage. Under these two heads, some part, the

the produce of Herefordshire, is included, perhaps an eighth of the whole; which, when deducted, leaves the number twenty-eight thousand one hundred and twenty-five pots. Not more than half the produce in this line exported, is supposed to pass through Worcester; allotting, therefore, to the markets of Bewdley, Kidderminster, Bromsgrove, &c. &c. and the rest of the county, north of this city, thirty thousand pots, the whole amount may be fairly estimated at fifty-eight thousand one hundred and twenty-five pots. The price varies considerably, from three shillings to six shillings the pot, and some of the inferior sorts, under. Four shillings is deemed a low average.

The quantity of cyder exported, as far as can be collected from the opinions of several principal planters and merchants, may amount to about ten thousand hogsheads, of one hundred and ten gallons; the average price for about ten years past, 3l. per hogshead, as it is delivered from the planter to the merchant. The delivery is often a circumstance of considerable consequence, as they frequently live ten, twelve, or fifteen miles apart. That is the price of the greater part of the cyder sent out of the county; there are some few particular sorts, such as styre and golden pippin, which bring from 7l. to 10l. per hogshead; the quantity of these is not very considerable. The quantity of perry falls short of that of cyder, perhaps it does not reach one-tenth; but little is exported except the prime sorts, such as the real jaynton, squash, huffcap, &c. these bring from 4l. to 7l. per hogshead.

The number of acres in the county, planted with hops this year, is 5988. The lowest average, places the produce, at six cwt. per acre; the lowest average price above 3l. 3s. Calculating upon these low estimates, the whole may with much probability be stated with the exports.

BENEFICIAL PRACTICES.

THERE are few peculiar practices in this county. The rolling pasture and seeded lands with large heavy cast iron rollers, is not observed in the adjoining counties, nor is it indeed very general in this. The advantages, however, where used, are very conspicuous, more especially on land that has been drained, that which is liable to be much trodden with heavy cattle, or is naturally disposed to be spungy. It has been also used on new seed land, with success. This practice cannot be applied in many situations: it is on the lighter dry soils where it is most useful, and even on these due attention must be paid to the seasons, and other circumstances. In several parts, the setting of beans by line, is practised, and found to succeed better than any other method yet attempted. The drill husbandry is well known, and is said to suit best the lighter soils. Dibbling wheat has been also tried on a small scale, and is said to answer; but at present, it does not appear likely to become general. The cyder mills of this county and Herefordshire, are infinitely superior to those of Devonshire, and if introduced there, would certainly be a valuable improvement. The advantages thence to be derived, will be more particularly pointed out, when that part of the business of the county comes to be considered *.

* The plough originally constructed in the Vale of Evesham, already mentioned, it is believed, might be adopted in other countries with advantage. It takes off the turf from any green land, about one inch and a half thick. The turf falls in the last furrow, so as to be totally buried by the mould, which is afterwards raised by another plough in the same beam; and by this mode of cultivation, the land can be harrowed almost immediately, which otherwise would not be well broken by two or three ploughings. There are certainly many parts of the kingdom, where this plough would be of use, when strong leys are ploughed up.

AGRICULTURAL SOCIETIES.

THE only society which has in view the promotion of agricultural improvements, is the Vale of Evesham Road Society. The narrow principle, which considers information in rural management no longer valuable, when generally known, though still to be met with in many above the lower class of occupiers, is gradually making way for more liberal sentiments. The nobility and gentry of the county, are uniformly communicative, and disposed to give every assistance in their power to diffuse knowledge, and to countenance and promote improvements; whatever alterations are proposed, are candidly attended to by all; and though the fear of disappointment in quitting old established customs, may long rivet some of the tenantry to their present errors, the success of those who dare judge and think for themselves, and who act in consequence, must in process of time remove them.

ON THE INCREASE OF POPULATION.

THE improvement, of all others, most likely to promote the welfare of this, and every other part of the kingdom, is that which shall tend to increase its population. Either the necessary labour on the land already in a state of cultivation, must be diminished by superior management, or the number of labourers increased, before the most important improvements in contemplation can be effected. It is sufficiently evident, that on this last point the principal dependence rests. How shall it be accomplished? Manufactures have a natural tendency to promote population, by enabling men early in life to support a family. Many circumstances, however, concur

to

to defeat it. The unwholsomeness of many of the employments in this line, and the general unhealthiness of the dwellings of the greater number of the labouring part of the community, engaged in manufactures, it is feared, more than counterbalance that advantage: it were well, did they support their numbers without any further demand upon the country. The same disadvantageous circumstances affect, the lower class of the inhabitants of large towns in general. These have been termed accordingly, and with too much truth, the grave of the human race. It is from the country alone, we can look, with well grounded hope, for this greatest of blessings; but here, from the disproportion labour bears to that of the necessaries of life, and the high rents required for the few remaining cottages; eight or ten years, the most valuable of a man's life, in this point of view, are lost to the community, before he can settle, with any prospect of supporting a family: it is even well, if, after so many years servitude, he has saved sufficient to provide the few necessaries of his cot, and has some little reserve left, for the first extraordinary emergencies that may occur. It is to those of large fortune, and great influence, we must look up for this essential service to their country; and great indeed, will be the merit of those who shall devote those advantages, with which providence has blessed them, to serve the common cause in that most essential point, the increasing its population. A civic crown was formerly decreed to him who saved the life of a citizen—what adequate recompense can be adjudged to him who shall be the means of adding many?

PRODUCE.

THE average produce of the tillage, bespeaks ample room for improvement, on land equal to any the kingdom can boast,

the highest seldom exceeding twenty bushels of wheat per acre, and falling frequently under fifteen: the average of the county at large, cannot be placed so high as fifteen—barley twenty five bushels on the poorer lands, up to forty five, as they improve;—oats and beans about the same;—pease very uncertain. The deficiency of the crops, considering the advantages of the county, is notorious; to account for it, would be rather an invidious task; something, however, may be suggested, and it is hoped, without offence.

In the hop districts, these most certainly engross too much time and attention; the plantations run away with the greatest part of the manure, whether home made or bought; and the hop planter, looks down on the other branches of husbandry, as a sort of secondary business, deserving but little notice, when put in competition with his darling hops; and what is rather extraordinary, though no one wishes for a general full crop, every one exerts himself, and strains every mean to procure one for himself. In the parts that are well fruited, too much dependence is also placed on this very precarious article: thus, advantages which, with an adequate spirit of exertion, would prove of the greatest benefit, are, in these instances, nearly lost.

FOUL SALT.

THE brine pits of Droitwich afford a manure, and in such quantities, as would deserve attention, were it not for the tax laid some years back on foul salt. This now acts almost as a prohibition; its usefulness has been fully ascertained, when used judiciously. There are those in the neighbourhood, who, after considerable expence, prefer it to most others, and employ it, though subject to a tax of 4d. per pound on the spot. No argument against it can be drawn, from the effect which the constant draining from the banks of the

the Droitwich canal (often very highly impregnated with it) has on the herbage immediately adjoining, no more than from nay other injudicious excess, which must always be detrimental.

MARL.

RED and grey marl is found in most parts, and its use as a manure is now pretty well known, though it has not been so generally introduced into practice as it deserves. On the light sands on the north, mixed with dung, and on the stronger soils, with a due proportion of lime thoroughly incorporated, it will probably be found one of the most useful that can be obtained. A method of washing marl over watered lands, has been employed in one instance in Devonshire; and should the latter improvement be more generally adopted in this county, the former may in many instances be introduced, with but little additional labour and expence. The general principle of conveying the water over the land, is the same in both. Where marl is found between the source from whence the water is obtained, no large quantity is necessary; and the part to be watered, is broke up in summer with the plough; and when sufficiently slacked, by exposure to the sun, or if in winter, by frosts, the water is directed near it, whilst a man throws into the stream what quantities of pulverized marl is judged necessary; and is thus conveyed over the whole surface of the land, with an accuracy scarcely to be conceived by those who have not witnessed it. The only precautions necessary, are the employing it on land for which the marl will be a proper manure, and not conveying so much at once as may endanger the herbage.

TILLAGE AND FALLOWING.

THE plough is generally observed on the fallows after rains, when the land is said to work well; the great error of dividing the roots of weeds, at the time the smallest parts are almost sure to vegetate, is overlooked, and heavy indeed must be the rain that drives them home, when the team has nothing else to do. What is here said, cannot be supposed to dissuade from going over the fallows frequently, but to inculcate one of the most certain truisms of good husbandry, that one ploughing in dry weather, is of more service than all that can be done in the wet.

FLAX HUSBANDRY.

IF the growth of flax was more generally introduced on the middle soils of this county, much advantage might be derived from it. The prejudice under which it labours, has been noticed, and may render the following instance of the benefit to be gained from it, not unworthy of attention. On part of an estate held by the life of a very infirm man, after it had been almost wholly exhausted by successive crops of corn, flax was sown, as a last resort—it thrived well, the invalid lived, wheat was tried again without manuring: the crop on it proved equal to any of those formerly gained after a moderate dressing. The unexpected success of this first attempt, induced the holder of the property to make farther trial of it; and such has been the uniform advantage arising from it, that in a very considerable district of the county of Devon, flax is now very frequently adopted as a very useful and lucrative shift crop; but before this can be generally practised here, the high ridges must come down; cross harrowing

rowing the land being absolutely necessary, to bring them into a fit state to receive the seed.

PONDS, AND DRINKING POOLS.

THE giving cattle clean and wholsome water to drink, is seldom so much attended to as it ought to be. More attention is beginning to be paid to this important article, at least in Worcestershire. A new pond has lately been invented, which is usually situated where the corner of four grounds meet. The pond should be made about twenty yards square, ten feet deep in the middle, and sloping on all sides. As a security for the water not running out, it is generally puddled, or secured with clay, over which must be thrown loose stones, or soil, and afterwards a pavement. The pond will fill by the rain in winter, and be replenished by the fogs during summer.

More attention also, ought to be paid to the water given to cattle in the fold-yard, which is in general impregnated with all the filth that issues from the surrounding dung-hills.

IMPROVEMENT OF STOCK.

THIS county is by no means deficient in emulation, with respect to stock; and though it is not pursued with all the enthusiasm observable in some others, it is perhaps conducted with more skill than in most; but this must be understood of the superior managers. One mistake, and that a very capital one, has been noticed more than once—the attempt to introduce a larger breed than the nature of the soil will admit. After all that has been done and said on this subject, the real principle of improvement consists in suiting the stock

to

to the soil. Sheep, of the best and most fashionable breeds, are in the hands of several gentlemen; and various crosses have been made, and some beautiful and fine stock has been produced. On the commons and open fields, there is the greatest room for improvement; this, however, under the present management, is impossible. The cattle of the country, are chiefly bought in from those of Hereford, Stafford, and Gloucester. Those that have been bred, in general, are a mixed breed, without any particular improvement in view. Some few have now turned their attention this way, and the experiments are in judicious hands, such as will spare neither expence nor care, in perfecting them. Were more oxen introduced into the working stock, it would undoubtedly, be a very advantageous improvement. One objection of some weight is this, that they cannot be worked in yokes, upon the declivities of the present high ridges; and the harness necessary for them, worked in length, is very expensive; but this will be done away when the ridges are lowered. Their advantage to the owner, in point of keep, expence, and other circumstances, is obvious; it may not, however, be superfluous to add, that in those parts where they are in general use, they are preferred by the graziers. They are worked till they are six years old; they usually begin at the age of two or three.

IMPROVEMENTS SUGGESTED.

In considering the more immediate improvements of which the present management of this county is capable, the first thing that strikes even the most superficial observer, is the value of its waste lands. The converting of these, whether into convertable tillage, plantations, or inclosed pasturage, must of course depend on their peculiar circumstances.

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The great point to be enforced, has certainly been but little attended to, in those inclosures which have already taken place—it is, to consider, in portioning out the land, the conveniency of draining and watering; the trouble and expence of which will be much curtailed, if these most material objects are sufficiently considered in the first demarkations; but few instances can occur, where the ditches for the necessary fences, may not be made useful drains, and in many, the only ones needful to carry off superfluous water. And there can be but few large tracts, a considerable part of which may not be allotted to pasturage, capable of receiving the benefit of watering. Should the meditated inclosure of Malvern Chase be carried into effect, the fairest opportunity offers itself, of procuring to the several allotments those inestimable advantages. It has been already hinted, how capable the greatest part of this county is of these improvements. A first step to this, however, must be, the clearing the natural primary drains, the water courses, the small brooks and rivulets; these are in general much neglected, and from their foulness, the water becomes in some measure stanked up, and continues at such a level, as prevents many of the smaller natural drains from emptying themselves. The custom also, of planting on the sides of the brook, and continuing the accidental growth on their banks, contributes much to this injury. The natural meadows, which are here of very considerable extent on the course of the large rivers, suffer much ftom this neglect; subject to be frequently overflowed, they are also drenched in heavy rains, with the water from the distant high grounds; and as the immediate banks of rivers are always above the level of the lands adjoining, the water, on both occasions, is continued on them so long as to injure them considerably. Open drains, to carry off the flood, and a sufficient water course, to receive and convey the torrents from above, to their natural destination, would prove a certain remedy to this evil.

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The planting of timber, is another principal improvement this county is capable of; and as it is but just emerging from that neglect in which it has lain for a long time, the examining any of the prejudices that have contributed to it, may still be useful. The charge of want of exertion, which in most instances of neglect in rural business, attaches to the tenant, in this, lies wholly at the door of the landlord. The very distant prospect of a return, has undoubtedly great weight, but this, with proper management, will be done away, as a return of 20l. per acre may be reasonably expected from the underwood, &c. in twenty years, equal to an annual rent of 15s. per acre; and this frequently, on land which in its present state, or under any other management, would produce little or nothing. Along the banks of the Severn, more especially to the north of Worcester, many small, and not a few, pretty considerable tracts of waste land, are met with, which seem, by every advantage that can occur to encourage plantations, to invite the industrious hand of the planter. On those few spots where accident or industry has raised timber, it is of the finest growth, and first quality. On the banks of the Avon, or at no great distance, similar situations are to be found. They are more frequent on those of the Teame; and though this river, not being navigable, does not offer all the advantages of the others, it is highly probable that floats of timber might be safely conducted, from any parts adjoining, in the high floods to which it is subject. The neighbourhood of the present canals ought also to be carefully explored, for situations of this description. There can be no doubt, but in process of time, upon this plan, the former abundance of timber might be restored. Were the same idea extended also to the farms, a great inconvenience, now much complained of, would be obviated, the mutilating of hedge-row timber. On most estates, some spots are to be met with, which cannot be so well employed in any other way, as in raising timber and underwood for the

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tise of the farm. Hedges might then be thinned, without prejudice to the landlord; and the occupier, more particularly those of the old small inclosures, would get rid of a very great nuisance; for such the timber, in its present crowded state, must be to the crops. Where fuel is plenty, as it may be said to be through the greater part of this county, the white-thorn hedge should be more generally introduced, being the cheapest in the long run, and incumbering the ground less than any other. It would certainly be an object well worth the attention of proprietors of estates, more particularly those residing in their neighbourhood, to raise large quantities of these plants, for the use of their farms.

The extreme height of the ridges, is an error that calls loudly for redress; it is wonderful to what a pitch this practice is carried, in all the strong soils of this district, even in the inclosures of modern date; in the old ones, their effects may be traced in the very meadows adjoining the principal rivers. Their inconveniences are sufficiently known; but no where can they be more conspicuous than in the vales of this neighbourhood: after a considerable fall of rain, the Vale of Evesham has in many parts the appearance of a country intersected in all directions by navigable canals; and this on a soil the most retentive of water. There are many parts of the county, in which an alteration in this might be immediately adopted; in all, as soon as the necessary drains can be completed. Other improvements that will follow, are these—lighter, and more active horses, and much fewer in number, will be equal to the business of the district, and the implements will soon shake off their cumbersome make: something considerable has been already done in this way, and more is in contemplation. The methods employed are chiefly these—on pasture grounds the turf is removed, and the centre of the ridge being broken up by the plough, is thrown down into the furrow, and the turf replaced. Perhaps a considerable saving of labour in this method may be

made, by laying aside the turf of the first ridge, and when this is lowered, covering it with that from the second, and so on till the last, which will receive that laid aside from the first. The turf will then be removed but once instead of twice, which is the case when it is taken off and replaced on the same ground. In other instances, where the land, from a state of tillage, is to be laid down for pasture, the ridge is simply levelled, by removing the soil into the furrows. The success of this method does not appear to recommend it, as it wholly robs the centre of its best soil, and a less fruitful tract points out for years after, the loss it has sustained. In a third, the spade alone is used; and in this manner a trench, some four or six spades wide, is first dug out, to procure room. The digging is then continued throughout two spades deep. The first is thrown into the bottom of the trench, to form the future surface—the second from the bottom is thrown into the furrow, by which means the centre of the former ridge still retains its meliorated soil. The detriment the ridge suffers, from being robbed, in the one instance, and the expence attending the more improved method, being inconvenient to the farmers of confined capital, has induced many, in the inclosures of the Vale of Evesham, to adopt a sort of middle method—a small ridge is thrown up in the former furrow, which accumulating gradually, will, in course of time, bring the general surface something nearer a level. As slovenly neglect is usual in most of the tillage, it is no uncommon thing to observe, in a piece of eight or ten acres, perhaps a sixth part round the boundaries, not only uncultivated, but left a nursery for weeds. Nor is this the only mischief—there is on these parts a constant accumulation of soil, brought by the horses, and different implements employed, from the centre of the piece, and of course it has a tendency to give it a hollow form, of all others the most inconvenient. If, however, the great weight of the plough, or other implement, on their present

present construction, and the resistance of a strong soil, requiring a greater number of horses to work them, is found to render so much room to turn, necessary, care should undoubtedly be taken to remove the accumulating earth, which, when done, and mixed with the other manure, will be found to have contributed the most valuable part of the dressing.

OBSTACLES TO IMPROVEMENT.

If the payment of tythes in kind, and mortmain tenures, are found obstacles to improvement, might not such obstacles be removed, by a law, enforcing a composition for tythes, to be assessed, not by the value of any particular estate, but by the average value of a considerable district, and re-assessed at different periods; confining the assessment to the value of the land in a common course of husbandry; that is, excluding all extraordinary improvements, such as buildings, plantations, &c. and by regulating renewals of the tenures under the church, in the same manner as the proportion of rent claimed as a fine, being ascertained by the value fixed for the tythes of the district.

The quantity of land still continuing in common fields and meadows, with the strange mixture of property in these, are also considerable obstacles. A general law, and that binding a small minority, by diminishing the present exorbitant expences that attend bills for inclosures, and the execution of them, would perhaps be the most direct means of removing them. The short time for which the tenants in general hold their farms, must also act as a considerable check on their exertions. Could any means be devised, of establishing that confidence between landlords and tenants, which ought to subsist among those whose interest must go hand in hand, a very considerable obstacle to improvement would be done away.

SPIRIT OF IMPROVEMENT.

THE lands in Worcestershire, have within the last twenty years been much improved in value, and the farmers in general have a turn for improvement. Even those who are not very earnest about it, *merely for the sake of improvement*, are ready enough to embrace a scheme, in which there is any prospect of advantage. Much, however, remains to be done; and the following queries, drawn up by an intelligent farmer, in Worcestershire, are well entitled to the attention of his countrymen.

QUERIES RESPECTING THE IMPROVEMENT OF WORCESTERSHIRE.

Whether turnips, and cultivated grasses, might not be more cultivated, and with great advantage?

Whether turnips ought not always to be hoed, and kept clean?

Whether marl might not be more advantageously managed, and more generally used?

As the hop-grounds are of great consequence to the farmer, whether more labourers ought not to be employed in cultivating the hops, as well as other parts of the farm; for, without a sufficiency of hands, either the one or the other must be neglected?

Whether the pasture grounds should not be cleared of the alders, and ash plantations made, and properly inclosed, on every farm, according to its size?

Whether the fallows do not follow each other too frequently?

Whether potatoes ought not to be more cultivated?

Whether beans ought not to be sown in drills, instead of broad-cast?

Whether improvements in stock, ought not to be more generally attempted?

Whether

Whether more cottages, for labourers, ought not to be built?

In regard to exciting a spirit of improvement, *premiums on produce*, although approved of by many, are not, perhaps, the best judged rewards. Land being of such different value, some worth ten shillings, and others worth thirty shillings, and even upwards, all hopes of a prize, would be given up by ninety-nine people out of an hundred, unless they were to rob one part of the farm to enrich a particular spot. The present high prices of grain, is undoubtedly a strong temptation to exertion; long leases would be another incitement, for few people will spend *much* on another person's land, unless from the hopes of being amply reimbursed, in consequence of their possessing an interest in the land for some years to come.

Having laid before the Board these general observations, on the agricultural state of Worcestershire, I shall now proceed, to treat more in detail of those two important productions, *hops* and *fruit*, the culture of which, is confined to this, and a few other districts in the kingdom, and consequently requires more particular attention; beginning with hops, for which this county is deservedly celebrated.

I. OF THE HOP PLANTATIONS.

THE hop plantations of this county are, in general, a pattern of neat and excellent husbandry. A very general and judicious experience, and the most persevering industry, have placed its management, in this particular, on the most respectable footing; and though something may be as yet

reserved

reserved to engage and recompense the future exertions of the ingenious and industrious, it may be asserted with truth, that the peculiar, or more general produce, of no part in the kingdom, has been cultivated with a greater variety of experiment, and emulous exertion, than the hop plantations of this and the adjoining county. The different sorts of this valuable plant, cultivated here, are ranged under three general heads: the red, the green, and the white. A various cultivation, the real source probably of these first distinctions, has introduced a variety of different species, though differing little more than in name and degree, of the same colour, shape, and size. There are two, however, in more particular esteem, both with the planter and merchant; the Golding Vine, brought from the neighbourhood of Canterbury, and the Mathan White, the name of which denotes it to be a native of this plantation, and of the parish of that name. The most hardy, that which will flourish with the least attention, and is least liable to suffer from the seasons, is the red; perhaps the original stock. The next in this line, is the green; which is also the most productive. The tenderest, though at the same time the most valuable, is the white. The plantations of this county are principally to the west of the Severn, increasing as they approach the banks of the Teame, and the confines of Herefordshire. The situations preferred, are a gentle descent, with a south, south-west, or western exposure, screened at a distance to the north and east by high ground, or plantations of timber; but not so as to prevent a free ventilation: the soil, a deep loamy land, or strong clay, after it has been thoroughly limed and manured: but above all, a boggy soil, when completely drained, and duly meliorated, is said to produce the best hops.

When meadow or pasture ground is broke up for this purpose, it is either deg, or the sward, being first pared thinly off by the paring plough, it is buried by the furrow plough, working full ten inches deep. Old tillage, when converted

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into hop-grounds, requires to be very completely cleared of woods; to be thoroughly mantured, and to have the ridges, provincially lands, entirely levelled. The different manners in which they are worked, are, the tump, and the ploughed grounds; the former by hand, and the latter by the plough: those are laid out in the quincunx form, each tump being at the distance of from five to seven feet from the centre of each other. On these, the distance between the stocks, is from three to four feet; that between the rows, from seven to nine; the greater or less space being always allowed, as the land is either richer or poorer. In the ploughed, if the circumstances of the ground will admit of it, the rows run mostly north and south, with the view to admit the sun more generally when it has most force; but should it be long and narrow, its greatest length extending east and west, that direction is preferred: there are those who give it the preference when not influenced by any accidental circumstances, as receiving the morning sun, by which the chill of the night is soonest dissipated. The sets are procured from the shoots, or roots of the stocks, at the annual time of dressing, the latter end of March, or beginning of April. They must have two joints each, the roots striking from that in the ground, and the vine shooting from that above. Four are planted to a stock, at the distance of about four or six inches from each other, all inclining or pointing, so as to meet together in the centre.

There are two methods observed in planting young hop-grounds; the first and more general is, to plant the sets on the situation in which they are to remain, immediately after they are parted from the old stocks. In the other, the sets are planted in nurseries, in rows about three inches asunder, with about five or six inches between the rows; here they grow till the month of October, when they are transplanted into the hop-ground. Under this latter management, if the roots are good, one will be sufficient for a stock. In removing

moving them, great care must be taken to make the opening to receive them so large, as not to confine the roots; when planted from the stocks, a hole made with a peg, to place them in, is all that is required. The nursery has certainly great advantage; besides the saving of a considerable expence, where the sets are to be purchased, the land may be worked through the summer, to prepare it for the plantation. During the first year, the grounds are ploughed, or hoed, provincially kerfed, three times. They produce no hops; but a good crop of pease, beans, cabbage, or turnips, is obtained between the rows. The second year they are poled, and yield half a crop; the third year, they are in perfection. When they have reached this state, the management is uniformly as follows:—They are gone over, mostly four times, with the plough or kerf, beginning about March. The first business is to throw down the tumps, and rows of the former year, and to work in the manure, previously brought on in the winter. This consists of fresh earth, rotten dung, or a compost of dung, earth, and lime, judiciously proportioned, according to the nature of the soil; each acre receiving not less than sixty cart loads, for a good dressing—it is repeated, according as the nature of the land renders it necessary. The stocks are now pruned, the remains of the old vines, and superfluous shoots, are removed with the hop-knife. The second moulds up the tumps and rows; the succeeding ones complete the moulding up of the plants, and destroy the weeds. The tumps are formed round, flat at top, and about twenty inches diameter, and somewhat broader at their bottom. The ploughed lands are thrown up much in the same manner as for potatoes, or beans, only higher, and with more soil. The shoots begin to appear in April, and the poles are pitched the latter end of the same month, or beginning of May. These are set two or three to a stock, at a foot distance from each other, with great regularity and exactness, and inclining a little outwards, over the alleys. Some at-

attention is necessary, in this part of the business, not to over-pole the plants, either in number, or the length of the poles, as it weakens them; and by drawing the vine out to too great a length, renders them less productive. About the close of this month, and beginning of June, women are employed to direct the vine to the poles, and tie them with dried rushes. This is continued till they are out of reach. The only care now remaining is, to keep under the weeds, and to go over the plantations occasionally, to replace any vines that may stray, and repair any damage the plants or poles may have received from the weather. When they have reached their full growth, which is, in some measure, regulated by the number and length of the poles, the side shoots put out. The method of topping the vines, to promote the lateral shoots, said to be practised in other plantations, is never used in this.

About the second week in September they ripen, when the hop-pulling begins. In a plentiful year, it continues six weeks, more or less, according to the crop. The cribs are now placed, beginning on that part which lies most exposed to the sun, as being soonest ripe; one, two, or more, as the proprietor's plantation is large or small, and he has the convenience of kilns to dry them. Each crib has eight or ten pickers, women and children; they pick, if there is a tolerable crop, and they are any ways industrious, from six to eight bushels each per diem, which is about a sackful (the sack in which they are carried green to the kiln); eight of these sacks, when dried, make about one hundred weight; but in some seasons, though no ways negligent, they will fall short of one half of this quantity. The pickers come from the neighbouring counties; but the far greatest number out of Wales; some from thirty and forty miles distant. From the cribs, the hops are conveyed to the kilns, four or five of the sacks alluded to before, at a time, on a horse, and are dried as soon as possible; they damage considerably, if suffered to lie long together before

they are put on the kilns. They will heat in six or eight hours, and lose colour; to avoid which, the kilns are kept constantly employed day and night. The time the hops take in drying, is from eight to twelve hours, according as they are ripe and dry. Great attention, and considerable judgment, are necessary in this part of the business, the whole of the year's expences and labour, and at times property to some amount, being at stake on a single kiln—it is usually entrusted to those who have been long used to the practice. The general principle on which they proceed, is to begin with a very gentle fire, till warmed through; the heat is then gradually increased, and continued till the core (fruit stalk) is quite sunk and dry. They are then removed, and thrown together in a heap, in a corner of a large room appropriated to this purpose, and frequently turned from one side to the other, in order to cool them completely before they are bagged.

The method of bagging is as follows:—A strong hoop is made fast round the mouth of the sack, which is then let down through a circular opening in the floor, made for this purpose; a few are first put in, when the man who is principal in this part of the business, gets in, and by constant treading, presses them down as close as he can. A second person is employed in breaking them (that is, tearing the flowers, &c. from the fruit stalk) and throwing them into the bag as they are wanted: thus they proceed till it is full, when the mouth is loosened from the hoop, and closed, leaving at each corner of the sack a space for the hand, for the better convenience of those who are employed in carrying them.

In the ground, nothing more is done, but stripping and piling the poles; these are always set up in them, about three hundred in a pile, sloping and propping each other, the better to withstand the wind. Different opinions are entertained respecting the superiority of the tump and plough manage-

management; the former has certainly the advantage in many particulars, and is said to be cheaper and more productive: but as it is impossible, from the present extent of the plantation, that any considerable proportion can be worked in this manner, from want of hands, the enquiry cannot be of much consequence. The expences of these plantations may be calculated from the following statement:—As they always occupy the most valuable tract on the farm, the rent cannot be set down lower than thirty-one shillings per acre, in some instances it is much higher. The acre is not to be estimated as statute measure, but after the rate of one thousand stocks to the acre, which is in general one-fifth less. The expence of manure is very heavy, as they produce none, except the ashes from the burning of the vines and leaves; so that were justice done to the rest of the land, the greater part ought to be procured from home. The price of dung (provincially muck) in general, is about six shillings per waggon-load, or three shillings per ton; (if from stables, in which horses are fed plentifully with corn, the price runs higher in proportion) and is frequently to be fetched eight or ten miles.

The hop-grounds are worked sometimes through the several seasons, as they are termed, at a fixed price, which is, from fifteen shillings to twenty shillings per acre, according to the different quality of the soil. The seasons are four, and thus divided:—throwing down and cutting, spreading and pitching poles, kerfing and tumping, stripping and piling poles: otherwise the workman receives his usual pay of one shilling per day, with drink; or some parts are taken by the acre, as pitching poles three shillings, stripping and piling two shillings and six-pence to three shillings and six-pence. The women employed to tie the vine receive six-pence per day, with two quarts of drink; or they take them by the year, at three shillings or three shillings and six-pence per acre. The hop pullers receive from six-pence to eight-

pence per day, with a pint of thickened milk, or something similar, for breakfast every morning; two quarts of drink per day, and two dinners every week. The pole-man, he who brings and removes the poles, has all his meals, drink, and from four shillings to six shillings per week. The coal (pit-coal charked) with which they are dried, is also an expence of considerable consequence; it is chiefly procured at Pinsax, in this county, at a distance of several miles from some of the plantations, where it costs two-pence half-penny or three-pence per bushel; twenty-eight bushels are a ton, and it takes two tons of coal to dry one of hops. The drier is paid from twelve shillings to twenty-one shillings per week, varying according to the number of kilns he has to attend: he has also his meals and drink. He who has the management of the bagging, is paid four-pence per hundred weight, exclusive of his assistant. There are different articles used for bagging: the Lubecks, and a sort of cloth manufactured at Dudley, in this county, are the most in use, and chiefly the latter. The price varies according to the demand. The Lubecks are dearest; they cost, in general, from twenty-eight shillings to thirty-four shillings per piece, and are thirty-six yards long, and about thirty-one inches wide. The Dudleys cost from twenty-two shillings to thirty-two shillings, and are of the same dimensions, each piece making eight sacks, four yards and three-quarters long.

Most of the estates which grow many hops, have plantations in which the poles are raised. Ash and barked oak are preferred; but willow, poplar, and alder, are also used. Where the estate does not produce a sufficiency, they are bought at the woods and coppices in the neighbourhood, at from five shillings to fifteen shillings per hundred: their length is from eight to eighteen, or twenty feet, proportioned to the goodness of the lands; they last, with care, seven or eight years. The sets, when bought, cost from six-pence to two shillings and six-pence per hundred. The last ex-

pence

pence is the duty, which is one-penny per pound, and fifteen shillings per cwt. on the produce. The average of the expences in general, is thus estimated: that of workmanship, from twenty-five shillings to thirty shillings per acre; those of picking, drying, charcoal, sack, and duty, thirty shillings per hundred weight. The implements used throughout this plantation are, the plough, the kerf, the spade, iron-crow, and the hop-knife. The plough is the common one of the district; the kerf is a large hoe, with a plate about nine inches broad, and thirteen deep; the spade needs no particular description; the crow is an iron bar, about four feet and a half long, generally square at top, with a large point, in the octagon form, used to make the hole in the ground in pitching the poles: the hop-knife resembles in make the sickle, an old one being often converted to this purpose, by grinding off its saw-edge, and giving it a sharp one in its stead; when made with new mettle, it is something smaller. The crib into which the hops are picked, is an open frame made of wood, standing about four feet high, four feet broad, and nine long. To the upper edge of this, is fastened the crib-cloth, which is nine yards double, made with the same stuff with the bags, but coarser and cheaper. The sacks in which they are conveyed to the kiln, are the same. The kiln will be afterwards described.

When the hop-grounds are come to perfection, it is the general practice to exclude every other growth, and trust to them alone, for a return of the great expence at which they are cultivated. Under this management, those which have been uniformly attended to in their prime, and not weakened by over poling, will continue to produce plentifully from twenty to thirty years; and in some instances, much longer, care being taken to replace the stocks that accidentally decay. On the other hand, fresh grounds are generally allowed to produce the finest hops, and in greatest abundance. A question of some difficulty arises, at what time it will answer best

best to give up the old, and plant new grounds, and must at last be determined by the peculiar circumstances of each plantation. But the error of continuing the old, as they often are, years after they have passed their prime, is self-evident. The first expence of the new, may weigh with the occupier who holds his farm by the year, or for a short term; but this is not the case with many of the principal planters. The same observation holds good with respect to the fruit plantations: these are often suffered to encumber the grounds, when there is scarce a hope left, that they may produce a crop anywise adequate to the expence of continuing them. This has given rise to the following practice, and were it universally adopted, it would probably prove advantageous to the planters in general:—The young hop-grounds are planted at proper distances with fruit-trees; these, from the frequent turning the soil and manure, are found to thrive better, and of course come to perfection sooner, by this than any other management followed in this county. The constant attention to the fences necessary for the hops, is of the greatest service to the trees, by protecting them from their greatest bane, the teeth and rubbing of cattle of every description. For years, there can be no doubt but the advantage to the trees, more than compensates any loss the hops sustain, considerably. Later, it is true, the trees prove prejudicial, by the spreading of their roots, and by their branches intercepting the light and heat of the sun; preventing also a free circulation of air. This, however, will not happen in any considerable degree, till they are fifteen or twenty years growth, the time when the hops, under this management, may be expected to decline, and it will be necessary to apply the land to the purposes of which it is most capable as an orchard. In this method, there would always be a constant succession of young vigorous plantations of both produce. Those years in which the hops fail, some return for the great labour and expence they are attended

tended with, might be looked for from the fruit; a larger proportion of the land would share in turn, that extraordinary attention which is now confined to those parts on which the hops are grown. The crops of these would probably never rise so high as they occasionally do now; but it must be remembered, these are not those which pay the planter best, as all the expences on the produce are the same, on a given weight, whatever price it bears. Moreover, the average produce of the plantations is now said to exceed the consumption: in the great years, such as the present, so much so, as to reduce the price so low as scarcely to repay the planter; they are, nevertheless, increasing: those of this county, within the last three years, have added one hundred and fifty acres to their former growth, and this, notwithstanding there appears but little prospect of any new markets for them being found: a very serious consideration, and highly deserving the utmost attention of the planters. If this statement proves true, the following practical inference may be with certainty drawn from it—that it will be adviseable to forego some of those points which are particularly calculated to assist the crops of hops alone, in favour of a produce, the value and consumption of which are constantly increasing.

The circumstance of those hops which are most in request, ripening all at nearly one time, is a considerable inconvenience both to the owner, and holder of the estate: as they damage so soon, whether left on the wires when ripe, or gathered, if not dried immediately, it is necessary to have buildings, and a number of kilns in proportion to the size of the plantations, and more hands during the season, than would be otherwise wanting. Could those sorts which ripen earlier or later, be improved, or any others introduced, that do so, it would be a considerable acquisition. The parts necessary to perfect the seeds, are found on different plants, and as the greatest stress is laid on these, it may be proper to notice, that the practice of removing the barren stocks, may be carried

ried too far: it is an enquiry well worth attending to, whether this may not be the cause, in some instances, of the early decay on some grounds.

The following observations of Dr. WITHERING (Bot. Arang.) on the honey-dew, deserve to be introduced to the notice of the planters.—"If the hop-yards were covered with "stones, the plants would be less liable to suffer from the "honey-dew, or from the otter moth; for the honey-dew is "the excrement of a species of louse (aphis); but these in-"sects seldom increase so as to endanger the plant, unless it "is in a weak condition; and the larva of the otter moth at "the roots, first occasion the plant to be sickly. Now, "when the hop grows wild in stony places, and fissures of "rocks, where the moth cannot penetrate to deposit its eggs, "the hop is never known to suffer from the honey-dew."

Under this view of the disease, might not the practice of smoaking the fruit plantations, on the first alarm of a blight used in some fruit countries, be applied here to those of hops? The other injuries to which they are liable, still remain without a remedy. A free circulation of the air through them, and complete draining of the land, are the only dependence. The use of the kerf is attended with one disadvantage, and which, when employed, almost solely, to destroy weeds, is of consequence: the person working with it, in some measure, defeats the intention of his labour, as he is continually treading down the soil again, he has just loosened; and thus, in some degree, resets the weed he had but a little before turned up; but the greater dispatch made with it, more than can be done with the spade, will probably continue it that preference in which it is held.

The tythe of hops is more particularly complained of than that of any other article, and considering the very great expence at which they are cultivated, it appears to be with reason. The present regulations respecting the hop-duty, are not complained of, and if the tax must be continued (to

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use the language of the planter), it cannot, probably, be altered for the better. The only use of consequence, to which the hops are applied, is the preserving malt liquors. The shoots, called hop-tops, are introduced in spring, as an elegant vegetable, and somewhat resemble asparagus. Strong cloth is made in Sweden, of the stalks; for this purpose they must be gathered in autumn, soaked in water all winter, and in March, after being dried in a stove, they are dressed like flax.

The construction of the kiln is as follows—The brick-work rises perpendicular from the ground, to a height sufficient to admit of about two or three feet below the bars, or grate, on which the fire is made, and about six or seven above it. The dimensions at the base vary, according to the size required for the grate, and to give the brick-work sufficient strength to support the superstructure. The height of this is determined by that of the building, when it is not erected new for the purpose. At the top of the perpendicular brick-work, iron bars are fixed at right angles; on them are laid tiles, or large flat stones, where they can be procured; these are covered on the upper side with a coat of mortar. The name given to this part of the kiln, the spark stone, sufficiently denotes its use; it is placed in the centre, and of such size, as leaves room around it to admit the heat above, at the same time that it prevents the sparks from the fire being carried there. From this part, the brick-work becomes wider, overhanging gradually for about four feet, in a funnel shape, when it again rises perpendicular about two feet: here joists are worked in, at small distances from each other, and on these, laths are nailed, forming the floor. The brick-work is continued a foot higher, forming a breast-work round the top; on the floor, and round this breast-work, the hair-cloth is spread, in which the hops are contained.

II. OF THE FRUIT PLANTATIONS.

THE fruit plantations do not share, in any proportion, the attention paid to the hops; such, indeed, is the natural fruitfulness of the soil, and so congenial to the growth of fruit of every kind, that it flourishes, even where most neglected, in a manner unknown to most other districts; of course, necessity, the first spur to exertion, is wanting. Many circumstances, however, unite now, to fix the attention of the county on this article of its produce.

The plantations may be considered as consisting of those in the old orchards, and those of later date; of those under the present improved management in the hop-grounds, and the single trees, either in hedge-rows or elsewhere. The old orchards are by no means deserving of particular notice, except for the strongly contrasted light in which they place the improvements already adopted, and to point out those which may be more abundantly introduced. There is no variety of soil or situation, surface or aspect, through the county, that has not its plantations under the old system. These leading circumstances of the present management, to judge from them, were much undervalued by our ancestors. They severally abound with a variety of the different kinds of apples or pears, and sometimes of both; and are much crowded, their greatest distance being, whether in pasture or tillage, twenty feet between the rows; and on an average, much less betwixt the trees (frequently, no order in the planting is discoverable); the heads, of course, have not sufficient room to spread, but are much entangled with each other, and form a shade so thick, as to injure materially, not only the fruit, but the crops also that grow beneath. In many instances, there is scarce an evil to which they are liable, though easily remedied with moderate attention, by which they have not suffered in a great degree. If the bark has escaped the teeth,

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not a solitary instance occurs, where they have been preserved from the rubbing of the different cattle with which they are stocked. They are universally over-run with moss, and often encumbered with a considerable weight of mistletoe, and decayed wood: such is the condition of many, from age and neglect, that they ought to have been replaced by young plantations long ago.

There is but little can be added, respecting the trees growing in hedge-rows: the practice is now generally condemned, and given up, for reasons too obvious to be mentioned. Those of long standing, partake of all the defects of the old orchards, as far as their situation will admit; the same may be said of those scattered up and down the farms, or found in small clusters, the remains of former small inclosures.

It is from the plantations of later date, more particularly, that the following observations are drawn.—Different soils are well known to influence both the quality and flavour of the produce; some attention has been paid, in this particular, but by no means all that it is capable of; the size to which the several trees naturally grow, and the predominant characters of the fruit, being but little attended to, in fixing on them for the culture of the different sorts. Those preferred are, the deep loamy lands, and strong clays, when perfectly dry. The former, on the soft sandy stone, which prevails in some of the western parts of the county, though without any considerable depth, is esteemed particularly well adapted for cyder plantations. The gravelly clays, frequent in many parts, are also deemed favourable. Marl, when duly meliorated, is in much esteem; perhaps, strictly speaking, many of the plantations, said to be on a clay soil, are growing on a meliorated marl. These are what are preferred, and are even necessary for apples. The pear will also do well on most other soils.

The situations are generally chosen, so as to avoid the extremes, which either expose too much, from their elevation,

or are liable to suffer from moisture, by being low. A gentle declivity, and south or south-west aspect, with a view to secure them from the chills of the north and east, is sought for: some distant screen also to the west, to protect them from the violence of the winds proceeding from that quarter, is required. No preparation of the ground, for planting, is made, beyond that which occurs in the common course of husbandry.

The stocks are generally raised from seed obtained from the crab, or kernel fruits, and mostly bought at nurseries. The price is from eight-pence to eighteen-pence: the management of them must of course be uniform; the only object with the nursery-men being to procure strong, upright, handsome plants, without any view to their future application, as to the different kinds of fruit which they are to bear; some are also procured wild from the woods. They are planted at about eight or ten years growth, seven or eight feet high, and about four inches girth; in this situation, they remain in general three years before grafting, as it is esteemed the best practice, to graft after they are transplanted to the spot on which they are to continue. The time of performing this, is in the months of March and April. The methods chiefly used are, the stock and saddle grafting. In the former, the head of the stock being sawed off, and two or more openings made with the saw, and afterwards smoothed with a knife, an equal number of grafts are secured in them with clay, or the common soil of the ground, tempered into a paste with water. In the latter, the head is also taken off, and the graft bestrides its top, which is shaped up into a sharp edge to enter it, and is secured as above. When this method is adopted, it is always done at a much earlier period, and generally in the nursery. The grafts are mostly procured from the same, or some neighbouring plantation. In taking up and replanting, the setting of the tree upright is all that is attended to—but little method is observed in either

cutting,

cutting, or placing the roots; the soil is returned as it came out, and if the ground is pasture, the turf is carefully replaced: they are then supported by one or two stakes drove into the ground, reclining towards them; to which they are tied with a band of hay or straw. In the hop-grounds, no further security is required, but in those that are liable to be stocked; they have either thorns fastened round them, or a frame to protect them: these frames consist sometimes of three stakes, standing triangular with cross-pieces; at other, of only two, but considerably broader than the former, and furnished in the same manner with cross-pieces. This, however, must be understood of the superior management; it is too often wholly omitted; or, having been provided at first, is afterward neglected. In the hop-grounds, and more modern plantations, the distance usually observed between the rows, and betwixt the trees, is from thirty to forty feet. From this time till they reach their full growth, the only attention they receive is, to train the trunk upright, and to clear the head from the low hanging boughs, in order to place them as far as may be, out of the reach of cattle. Pruning the trees, and clearing them from decayed and useless wood, is, in some degree, continued afterwards. In about five years from grafting, they begin to bear; and in about thirty years, are supposed to reach their prime, and to continue in full vigour thirty years more. Pear-trees, for a still longer period; in many instances, they are known to have produced plentiful crops when a hundred years old. The produce of the different sorts of fruit, varies considerably—an apple-tree that yields a hogshead of liquor, is deemed a great bearer; whereas, instances have occurred, of a pear-tree affording three hogsheads, of a hundred and ten gallons each. Most plantations have their trees, that, in a tolerable year, give a hogshead each. The apples in most esteem are, the red and yellow stire, golden pippin, blandrose, red streak, different sorts of quinnings, rennets, margils,

pear-

pear-mains, &c. &c. The pears are squash, huffcap, barland, linton, &c. As a general characteristic, apples of a yellow or red colour, both within and without, are preferred.

The management of the soil varies in nothing from that pursued on those parts not planted; the same succession of crops is observed on the arable, and the grass-grounds are either mowed or grazed as usual; nor is the choice of manure influenced, but by the circumstances of the soil. The different fruits, and their several kinds, ripen at different times, including the early sorts for the market. The season begins about June; but the fruit-harvest, more strictly speaking, for the general orchard fruits, not till the beginning of September for pears, and the close of the same month for apples. Their falling spontaneously from the tree, is the only criterion by which they judge of their ripeness. Two methods of gathering are observed—the one is, hand-picking, when they are taken from the tree singly by the hand, so as to avoid every risque of bruising them. In the other, and more general way, they are shook off with long poles having hooks, with which they lay hold of the boughs; or, when more force is necessary, they are beaten off with the poles. The first is usually followed with the fruits designed for the table, or the market; these are generally gathered before they are fully ripe. The latter is universally adopted in gathering those for the mill; in this also, the trees are always cleared of the whole of their produce at once. That which is designed for the table at home, or for the market at a later season, is laid up dry on the floors of large rooms, strewed with straw; in frost, they are covered with it, and are examined occasionally, to prevent, as much as possible, the accidental decay of any from injuring others. That designed for the mill, is collected together, even the choicer, in large heaps, near the mill, in the open air, and on the ground: the two last circumstances are particularly insisted on, to prevent too great fermentation before they are ground.

But

But little care is taken to keep the several sorts apart: a particular quarter of the general heap, is the chief distinction; a partition with a board is sometimes made, but this is only for the prime fruits. The size of the heap is very uncertain, as no means are employed to confine them; in the centre they usually rise to the height of three or four feet. In this state they remain exposed to the weather, till they are judged to be mellow ripe. Should not the whole be made into liquor before the frost sets in, as is often the case in great fruit years, the heaps are carefully covered with straw, to preserve them from it.

What follows, with respect to the making of cyder, must be understood as relating to the general practice of the county. When deemed in a proper state, the fruit is conveyed into the mill, and ground with great care, so as to reduce the whole pulp, rind and kernel, as much as may be, into an uniform pap. When removed from the mill, it is thrown into a vat, where it remains for a day or two, till some degree of fermentation is observable. It is then put into separate hair-cloths, each being, when the sides are raised over the contents, about six inches thick; and from six to ten of these are placed, one on the other, beneath the press, where they are continued, under a most powerful pressure, so long as any juice can be forced from them. The liquor is then put into other vats, and when the grosser fæces have separated, it is drawn off into casks of sixty-three gallons each, leaving both the scum that had risen to the top, and what had settled to the bottom, behind. This being strained through a three-corner bag of linen, or woollen cloth, is added to the other liquor, and is supposed to be the best of the whole. This last part of the process is omitted till after the principal part of the liquor has been racked once, or oftener, as it is found necessary to check the fermentation; and the fæces separated at each time, are collected, and the whole strained as above. The liquor thus gained by straining, is found to possess considerable power to

retard

retard fermentation; it is accordingly added to each vessel, in proportion as it seems more or less disposed to ferment. The refuse from the press in plentiful years, is thrown away: but in those of scarcity, it is mostly ground a second time, with water; and the liquor procured, is used as an inferior family beverage, called, provincially, *washings*. In very scarce years, it is not to be supposed but the cyder-house has its obligations, in point of quantity, elsewhere, as well as to the trees. The management of the fermentation and fining, is an art so refined, so enveloped in mystery, that mortal language is not equal to the describing of it; though communicated some way or other to numberless votaries, they have all acquired it they know not how; of course they cannot, perhaps will not, give any information on the subject. This much is certain, no borrowed ferment is used, and the fining is variously conducted with white of egg, isinglass, ashes, sand, bullock's blood, or red earth, according to the suggestions of the several genii who may be supposed to preside over this part of the business.

The dimensions of the buildings vary according to that of the plantations. The construction of the mill is this:—A heavy round and flat stone, running round on its edge in a circular trench, sunk in several others closely joined together: the fruit is thrown into the trench, and ground by the weight of the circular stone rolling round, and drawn by a horse. The dimensions of the bed, or horizontal part of the mill, that in which the trench is made, in one of a middle size is about ten feet diameter, and stands about twenty inches from the ground. The depth of the trench, is from eight to twelve inches. On the inner side, it rises perpendicular, the outer sloping so as to give about four inches greater breadth at top than at bottom; by this means the fruit, when crushed from under the roller, rises chiefly on that side, and is more easily returned into the centre by the person who follows, generally a woman, or child, who also attends to the horse. The returning

turning of the fruit into the middle of the trench, is sometimes effected by fastening a piece of wood, used for the purpose, to the mill work. The size of the circular stone, or roller (that which runs in the trench) in a mill of these dimensions, is about four or five feet diameter, and about fourteen inches thick; the weight varying according to the texture of it, from one ton to one ton and a half. An axle-tree passes through the centre of the roller, one end of which extends sufficiently over the bed of the mill to admit of a horse being fastened to it; the other enters an upright shaft, which has a circular motion by means of a pivot in some beam or bearing of the floor above; the bottom has a similar motion on the centre of the mill. The axle-tree has also a rotary motion in the shaft, and again in that part to which the horse is fastened. Thus a circular and rotary motion is obtained. In this state, however, which is by far the most general, the machine is incomplete, as the roller frequently slides along the trench, forcing the fruit before it. To obviate this defect, a cog wheel has been added, in several instances, to the inner arm of the axle-tree, which working in the teeth of a corresponding wheel fixed on the surface of the bed, this motion becomes equally certain with the other. Another improvement, lately adopted, is this—the inner edge of the roller is sloped off, so, that when standing in the trench, it forms with the bed of the mill a level, by which means the circular motion is much eased. The rotary motion is also much assisted. The press is constructed on the same principles of every other perpendicular press: short levers are used at first, afterwards longer; and at last, a long iron bar. To increase the purchase, a strong rope is ultimately fastened to the end of the bar, by means of an open noose, and secured from slipping off by a pin; this rope communicates with an upright post in a distant part of the building, moving on pivots at each end; the lower, in a hole of the floor, the upper, in some of the timbers above: this post has also openings about three or four feet from the ground,

to admit levers, by which it is worked, and the utmost force required is obtained. A cast iron screw has been lately introduced instead of the wooden one—no inconsiderable improvement.

The only defect complained of in the mills, is this—they do not always break the kernel sufficiently (it must certainly be very difficult to fix so small, hard, and slippery a part, when dispersed through large quantities of soft matter in machines of such dimensions), nor is it probable any improvement of the present simple, but excellent construction, can wholly obviate it. Nor do the different contrivances hitherto proposed, seem likely to be very generally adopted. Such, however, is the price the more perfect liquors bear, as to make any moderate additional expence not of material consequence. In preparing these, picking the fruit, so as to separate that which has been damaged, is particularly recommended by the first managers. When this is done, might not the person thus employed, with a circular scoop, take out the core of the apple with but little additional trouble? The form of the instrument conceived under this idea, is as follows: the cutting part of it cylindrical, open at both ends, half an inch, or rather, more in diameter, and about two inches long; from each side proceeds an upright piece, three inches, or something longer than the largest fruit, to give room for the core to fall out between the top of the cylindrical part and the handle: this is formed by these two pieces meeting in the middle, and entering a cross piece of wood. It is conceived, that with little practice, this might be used with considerable expedition by children, at very low wages: bone would be the most eligible material to make it of. Should metal be used, the inside of the cylinder might be armed with two or more cutting edges, crossing the diameter, or rising along the inside; these would serve to divide the core still more. The kernel, thus separated from almost the whole of the pulpy part of the fruit, would, if ground by itself, be with more certainty

certainty brought under the action of the mill; or would be reduced with much less trouble, by any of the other machines that are used, or have been proposed, for grinding fruit. The method of using it would be this—a piece of deal, or any soft wood, must be fixed before the person employed, on which to rest the fruit, while the scoop is forced through it, and a pail, or bucket, underneath, to receive the core as it drops from the scoop, each forcing out that which preceded it. Should the idea, as thus stated, be approved, it may be carried still farther. The fluted iron rollers, used in some parts of Herefordshire for a cyder mill, might be adapted to this grinding of the kernel; and contrived, without much additional machinery, to work with the present mill, or the construction of the malt mill could be easily applied; the nut being fixed on the inner arm of the axle-tree, the box secured by a support, projecting above and below from the upright shaft. All this, however, is only conjecture, no attempts having been made as yet, to put it in practice. Should it be found to answer, or lead to any other improvement, by directing the attention of the ingenious to this defect of the present mill, every end proposed will be fully attained.

The stone of which the mills are made, is not met with in any part of this county; they are procured from several parts of Herefordshire; the nearest is Bromyard-down, a distance of about eleven miles from Worcester. Those most in esteem, are brought out of Wales. The price of the stone, worked at the quarries, is twenty shillings per foot; that is, a mill, the bed of which measures ten feet in diameter, costs ten pounds; the expence of setting up one of these dimensions, four or five pounds; the price of the hair-cloths for a press, to a mill of this size, is from five to six shillings each; they measure about three feet six inches square, and last, with care, twenty years or more—the mills, a hundred years and upwards.

The superiority of the mills of this district over those generally used in Devonshire, has been already noticed; and so very obvious are the advantages they possess, that it appears matter of much surprise, they should not have hitherto supplied the place of their very imperfect contrivance to break the fruit—this being the most the mills of that county can be said to do. The benefit derived to the liquor, from the rind and kernel, appears to have wholly escaped the observation of the cyderists of that district, and is certainly the reason of their sending the fruit to the press so very imperfectly reduced as it is in their present practice. The hair-cloths employed here in the press, should also supersede the reed and straw used there. They are not only more convenient, but, on the whole, considerably cheaper; the reed for a hogshead of sixty-three gallons, costing, on an average, sixpence, seldom less.

There are other circumstances in which the fruit management of the two counties varies considerably. The following instances may possibly be found deserving the attention of the planters of this.—The orchards of Devonshire are wholly appropriated to this produce; no other crop, except now and then a little garden stuff, is ever expected from them. It is, as before observed, a general clause in their leases, that they shall not be stocked; and though horses, and perhaps calves and pigs, are turned in, in the spring and beginning of summer, it is mostly a trespass upon the covenant. Sheep are universally excluded, and this, from a well-grounded apprehension, that the grease, or whatever it may be they leave on the trees after rubbing against them, is peculiarly prejudicial.

Upon the first surmise of a blight, they collect the coarse grass of the orchard, or any other material that in burning produces a considerable smoke, and with this they fumigate them. Myriads of insects have been known to be destroyed in this manner. The fruit is gathered as it falls from the tree;

tree; no force is used till the leaves are mostly fallen, and all employed then, is shaking with the hand, or striking between the larger branches with a slight pole. It is, if possible, collected when dry, and housed in a loft over the mill, separated frequently with partitions, all opening by sliding boards into one part, in which there is a hole, through which it is let down into the mill; as that gathered first is placed nearest the opening, it of course is also ground first. No respect is had to quantity; whatever the loft will hold, is placed in it without scruple. The circumstance of much rain falling on the fruit when separated from the tree, though totally disregarded, or rather recommended here, is considered there as one of the most fatal accidents that can befall it. If the loft over the mill is not equal to the whole crop, what remains is laid up in other buildings.

As some liberty has been taken, in reprobating what appears to be the general management of the county, with respect to the fruit plantations, the following observations are offered, with great deference, to the consideration of the planter.

The advantage of situation is thoroughly understood, and though there is some difference of opinion as to aspect, the leading principles are well ascertained; and will no doubt, in due time, be universally carried into effect. The general outlines, with regard to soil, are known and observed, but there appears room for improvement in the filling of them up; that is, in the appropriating of the several soils which are fit for fruit; to secure and improve the discriminating qualities by which each of the superior sorts is distinguished. Trees which naturally grow to a large size, planted on a shallow soil; austere fruit on a strong clay; and that which is dry and spungy, on a crude marl, are errors often met with, very obvious, and easily avoided. The stock should be raised under the eye of the planter, or under his who has a still greater interest in the success of the plantation,

tion, the proprietor's of the estate. In the nursery, a proper distinction should be made, of those raised from the seed of the crab; those from an austere, and those from more mellow fruits; that they may be each applied to the growing of fruit of that character they suit best, or may be most likely to improve. There certainly is no sufficient reason why those from the crab should be uniformly preferred; the others may, without doubt, in many instances, have a preference; they decay sooner, but they also come to perfection sooner; and when the seed is selected with care, from young vigorous trees, as that of every kind ought to be, are found to possess every requisite to form handsome and lasting plants. Owing to inattention in adapting the stock to the size of the tree it is intended to support, it is very common to see the upper part of the trunk, that growing from the graft, several inches larger in girth than the lower; that which remains of the stock, forming a considerable projection where the graft was inserted. Great care should be taken in the choice of stocks, independent of that to ascertain the seed from which they are raised. At a very early date, a pretty accurate judgment may be formed of the future success of the plant; at two or three years growth, many will be found to put out thorns; others will be disposed to throw up shoots from their roots; both should be invariably removed immediately.

An improved practice in grafting, has been lately introduced, and deserves to be more generally adopted. Instead of taking off the entire head of the stock, it is left on till the the boughs are large enough to receive the grafts. An injury to which the trees in general are liable (splitting in the crown) is by this means in a great measure avoided. The common soil, or clay, used to defend the grafts, is apt to crack, and fall off in dry weather; and a compost of sand, and new cow, or horse dung, would be a useful improvement. The absorbent system of plants, being now generally admitted, it is an inquiry worth attention, how far the

practice

practice of taking off the whole head of the tree, in grafting, may prove prejudicial to its growth. The spare trunks of the lopped elms of the district, stretching out their small heads to the length they do, in quest probably of nourishment they have been deprived of, certainly countenance the suspicion.

In preparing the ground, something more than the mere sinking of a hole capable of receiving the roots, ought to be done. The openings should be made at least two feet deep, and for some considerable time before hand (the longer in reason, the better); the earth, more particularly that from the bottom, should be repeatedly turned; if the soil be of a stiff marly nature, till it is completely reduced. They ought also to take in a circumference exceeding that of the roots, in order to give the young fibres sufficient room to extend themselves through the meliorated soil: six inches is the depth at which trees ought to be set. In planting, the hole should be nearly filled up with some of the inferior soil; on this the sod, which will probably be nearly rotten, be laid, and the roots spread with care immediately on it. A necessary precaution is this, that they do not cross each the other, and that they extend as much as may be, equally in every direction; the remaining mould should be then returned, throwing the best, that from the former surface, round the outer part of the hole, and working it carefully in among the extreme roots. To those who have been accustomed to plant in the usual manner, these directions will, perhaps, appear trifling and unnecessary; they are recommended, however, not as a plausible theory, but as the result of a very considerable experience. Watering the holes before planting, and the trees after, has been practised, and it is said with advantage; but the time and labour this requires, to do it properly, or rather so as not to prove injurious, must exclude it from the common practice; it will be, however, right to pay attention to the nature of the soil,

and

and if dry, or of a very loose nature, to plant rather in the months of October and November, than in the spring.

The following instance of successful management in this particular, deserves to be recorded, more especially, as there are many situations in this county that now lie neglected, on which it might be adopted with every prospect of success. The ground planted was in pasture, with a gentle declivity; the soil, a shallow strong clay, on a solid calcareous marl. About the middle of March, circular holes were opened, about four feet in diameter; the sod, with the surface soil, to the depth of about six inches, was thrown up on one side, on the other, that beneath, so as to leave an opening two feet deep: during the summer, the whole was repeatedly turned, and as winter came on, the earth being then dry, was thrown up separately into round tumps, by the sides of the opening; on the approach of the following spring, small gutters were made level with the bottom of the holes, opening on the surface below, so as to carry off all the water that could collect in these basons formed in the marl. In planting the trees, the method already recommended was observed, and in the following winter, a circular trench, two feet wide and two deep, was dug out round the outsides of the first openings; the soil left exposed, and turned as before; and the ensuing summer, it was nearly filled with furze, before the soil was returned into it, with the view to keep it loose, and by that means invite the shooting of the roots. The gutter was also extended, and carefully preserved. On the adjoining ground, the situation and soil exactly similar, a plantation was made in the usual manner, the trees being set when the openings in the first were made. The latter was repeatedly manured, and managed throughout with attention: on the former, no manure has been used. The trees of each plantation were young and thriving, about the same age when planted, and every other circumstance, exclusive of the method of planting, the same. The result

of

of the experiment, for such it may be called, though accidental, is this—the trees of the former plantation are at this time (about fourteen years from the first opening of the ground) full twice the size, some even three times, that of those in the latter, which are nevertheless allowed to be well grown. The difference of the produce is equally great. One circumstance, however, ought not to be omitted, and may probably be thought to have contributed in some measure to the superior growth of the former: they are trained so as to form low spreading heads, branching off at about two feet from the ground. The latter, on the contrary, to form what has been termed the upright besom-head, with a stem about five feet long, which is the usual height in the more western parts of the kingdom.

The only motive that induces to guard the trees, appears to be the apprehension of their being torn up by the wind, or barked whilst young, by the cattle. The mischief done to them in every stage of their growth, by the rubbing of the cattle, is totally disregarded. Such, however, is the opinion entertained of it in another fruit district, that, as has been before stated, it is usually an article in their lease, that the plantations shall not be stocked at all, principally with a view to obviate this mischief. Here are two extremes, perhaps both equally remote from the point of good management. This much is certain, that the continuing the fences round the trees in the grass-grounds, and keeping the stock of every kind off the tillage, after the crops are removed, and when fallowed, would be amply recompensed by the growth and fruitfulness of the trees.

The inconveniences attending the gathering and sorting of the fruit from orchards, where they are growing promiscuously, are so evident, that future planters will undoubtedly avoid them, by appropriating separate spots to the several varieties.

The present generation has to regret a great want of attention in their predecessors, in the choice of their fruits, in a

considerable proportion of the aggregate plantation, a total neglect; this consisting of the bare spontaneous production of accident, notwithstanding they had fruits to choose from, perhaps equal to any art can produce. A just idea of the importance of this neglect, may be formed, by comparing the great difference in the price the better and inferior sorts bear, and will no doubt have due influence with the planter of the present day. Indifference in this point, would be the more unpardonable, as it is not for future ages alone he plants; he often lives to share abundantly the chearing offspring of his labour.

When young orchards are planted out of the hop-grounds, and the distances now recommended are observed, might not cherries be advantageously planted in the rows between the apple trees? It is said to be practised in some fruit districts, and with success. They bear, and reach their full growth, much sooner than the latter, and produce a very lucrative crop. In the neighbourhood of Worcester, there are about twenty acres in cherry orchards, now in perfection; ten of which are known to be lett for one hundred pounds per ann. the remaining ten are not in any respect inferior to the others, and probably bring, nearly at least, the same rent; and yet, such is the demand for the fruit, that the market, three times a week, opens by three or four o'clock in the morning, and is generally cleared before seven.

It appears extraordinary, that a doubt can possibly arise, whether or no the two additional crops of the fruit and hop districts, operate ultimately to the advantage of the occupiers. In this county, about six thousand acres of hop-ground, and perhaps a third of this quantity (two thousand acres) may be estimated as adequate to the injury the ground crops sustain from the trees; these making together eight thousand acres; and may be supposed to produce this year, calculating by the former statement of the exports, as follows:—By hops (the lowest average price cannot be set down, now, at less

than

than 3l. 10s.) 126,000l.;—by fruit, 11,625l.;—by cyder, 50,000l.*;—by perry, at the average price of 5l. 10l. per hogshead, 5,500l.; amounting in the whole to 173,125l.; that is, considerably more than 21l. per acre. To this must be added, a saving in malt to a very considerable amount; and yet, a doubt not only may, but is very generally entertained, whether or not the tenantry at large is benefited by these crops. The same number of acres, under a common course of husbandry, in no instance, in this neighbourhood, produce a sum equal to this, even after allowing for the more frequent failures to which these are liable. To state this circumstance, is all that can be done; to investigate the subject fully, would exceed the limits of this Report; one circumstance, however, relating to the fruit, as more particularly striking, may be here mentioned, in addition to what has been said before concerning the hops—this is, that the fruit plantations have not been hitherto considered, by the more numerous part of the planters, as producing an article for the market. Provided they are fortunate enough to get the enormous supply of liquor necessary for the home consumption, without having recourse to the maltster, they rest contented. It may be urged, that the market for these liquors

* Price of cyder, such as in general used in London, and in public-houses, from 1781 to 1794, communicated by Mr. Hooper.

PER HOGSHEAD OF 110 GALLONS.		PER HOGSHEAD OF 110 GALLONS.	
1769	21 Shillings.	1782	52 Shillings.
1770	35	1783	80
1771	40	1784	25
1772	63	1785	80
1773	90	1786	100
1774	35	1787	90
1775	32	1788	21
1776	21	1789	48
1777	100	1790	45
1778	35	1791	46
1779	60	1792	60
1780	19	1793	52 6d.
1781	59		

is not very extensive; but does not the high price at which the more pleasant sorts are sold, chiefly contribute to confine it? Those that are rough, more plentiful, and cheaper, are not a marketable article out of the plantations; it requires a long habit, to reconcile the palate to them.

CONCLUSION.

In concluding this account of the rural œconomy of this beautiful county, the person to whose lot its survey has fallen, wishes to observe, that throughout the whole, it has been his endeavour to state the several circumstances of it, in as accurate and distinct a light as possible: but little claim of originality is made, and he trusts no charge of inaccuracy, from a neglect of earnest exertion, can be brought. Where any improvement is proposed, it is the result of frequent consultation with some of its first managers; it is their practice particularized, in hopes that, if these sheets ever reach the hands of the less informed tenantry, they may have that merit, at least, of directing their attention where they cannot imitate without improvement.

To the nobility and gentry, and several of the principal tenantry, many thanks are due, for a most favourable reception, and kind assistance*; to the Board, and their respectable

* The only particulars, about which the Author found any difficulty in procuring information, was in regard to hops and fruit. The planters of these, were in general inclined to be tenacious of their knowledge, at least few, actually engaged in the business of raising either, seemed disposed to be very communicative upon the subject. This, it is believed, might be principally owing to the apprehension of taxation, the cyder tax not being yet forgot. This jealousy, however, it is to be hoped, will soon be removed, as it is only by a free communication of ideas, and comparing the result of experiments made in different parts of the kingdom, that either hop plantations, or orchards, or the making of cyder and perry, or indeed any other art, can be much improved. It was principally with a view of comparing the practices of Devonshire and Worcestershire,

ble President, some apology, perhaps, for the lateness of the return: this, however, was, in a great measure, influenced by circumstances not to be remedied either by zeal or industry.

cestershire, in regard to fruit, and the liquors thence extracted, that the Author was sent by the Board of Agriculture from the one county to the other; and from the information accumulated upon the subject, by the survey of this and of other districts where hops and fruit are attended to, the art of raising, and the proper management of both, will probably be brought to perfection.

APPENDIX.

NUMBER 1.

MR. TURNER'S ACCOUNT OF THE WATER MEADOWS ON THE FOLEY ESTATE; BEING THE SUBSTANCE OF A LETTER TO MR. POMEROY.

THE plan of watering the lands in this neighbourhood, belonging to the FOLEY family, is shortly as follows:—It is in the first place necessary to observe, that all the mills on the brook, or stream of water, as soon as it enters on their property, until it unites with the river Stour, for near three miles, belongs to them, of course they have the controul of the water. At the upper end of the stream, are three or four water-courses, made for several miles upon a level to the different farms that are watered, and the old stream divided in a manner proportioned to the quantity of land each course is intended to water. The farms that receive this valuable acquisition, are eight or nine, and the quantity of land watered upon the whole of them, is between three and four hundred acres. The quality of the soil, in general, is a very light sand, and many parts of it mixed with gravel: by the division of the stream as above, each farm has its portion of water repeated from two days to a week, every three weeks throughout the year; and in order to prevent the least dispute between the tenants, respecting the distribution of the water, a person is appointed to turn it from one person's land to the next in turn, at certain stated times fixed for this purpose.

The farmer then takes to the management of it, and floods such part of his lands as is generally prepared to receive it. There are very few of them that mow the whole of the land they water, but mow and graze it alternately, in such a manner that they use the water at all seasons of the year in their turn. A very considerable quantity of land in this neighbourhood, is well situated to receive this improvement, if the stream was sufficient for the purpose, besides the number of acres already mentioned, the greater part of which was formerly a very poor arable land, and not worth more than five shillings an acre. The industrious farmers are very attentive to the use of the water; all the gutters are cut for floating, with the use of a water-level, and the more numerous the gutters are, the greater quantity of grass the land produces. In some situations, with the use of little stop-gates, the gutters are cut deep enough to drain the land they are made to float: this circumstance, where the land requires it, is worthy of great attention. The whole plan of irrigation, where practised (and very few farms indeed, but will admit of it in some degree), is beyond a doubt the first, and greatest improvement, at the least expence, ever discovered.

Jos: Banks

NUMBER II.

MR. DARKE'S ACCOUNT OF THE AGRICULTURAL STATE OF HIS NEIGHBOURHOOD.

The following paper, drawn up by JOHN DARKE, Esq. contains so many useful observations, that it was thought advisable to print it separately.

Bredon consists of seven hamlets, Mitton, Hardwick, Kinsham, Norton, Westmancoate and Cutsdean. Five of these hamlets are in open fields; the soil very various, nearly one-half bears turnips tolerably, the other parts are clayey gravel; it all bears clover well: we have pebbles in every soil.

By our situation, we are much exposed to the south-west winds, having few intervening hills between this place and the Bristol Channel. Situation, the west end of Bredon hill, about three miles from Tewksbury in Gloucestershire: the southern part of the parish runs up within one hundred yards of that town. The Earl of COVENTRY has six hundred acres of inclosed land at Mitton, in a ring-fence, not to be equalled in richness and fine produce: to this farm the plough is a stranger; the soil a black loam. The parish, for five miles on the west, is bounded by the navigable river Avon, and by the river Carran for three miles on the east.

The lands being in common fields, and property much intermixed, there can be of course but little experimental husbandry; being, by custom, tied down to three crops and a fallow: first, barley, second year, beans (which always produce abundantly), or clover or vetches, which are ate off as green crops by the horses, tied with stakes and ropes, made with the rhind of wych hazle (a nasty habit peculiar to the Vale of Evesham); yet there are well-informed gentlemen, who highly commend this mode of husbandry. The third, wheat, which is sown on the bean stubble, or clover sward; and this mode invariably succeeds better than sowing it on fallow ground—a doctrine in general disbelieved by those who are strangers to the Vale of Evesham, so remarkable for its high ridges and deep furrows.

The mixture of property in our fields, prevents our land being drained, and one negligent farmer, from not opening his drains, will frequently flood the lands of ten that lie above, to the very great loss of his neighbours, and community at large. Add to this, that although our lands are naturally well-adapted to the breed of sheep, yet the draining, &c. is so little attended to in general, that out of at least one thousand sheep annually pastured in our open fields, not more than forty, on an average, are annually drawn out for slaughter, or other uses: infectious disorders, rot, scab, &c. sweep them off, which would not be the case if property was separated. Draining the lands, is the principal, and first good effect from inclosures. In our uninclosed hamlets, the meadow and pasture are fairly proportioned to the arable, which is, on a computation, about one thousand six hundred acres; the pasture one thousand three hundred, and the Avon meadows eight hundred. There are, besides, five hundred acres of commonable lands, which are of little or no value; being over-stocked, produce a beggarly breed of sheep, of no use to the owner, for being constantly brought off the high lands in autumn, to

pasture

pasture and feed on the lands subject to floods, they are there baned, which consequently prevents the public from that produce which might assist population and commerce.

The farms are from five hundred to ten pounds annually.

Some of the finest pastures at Mitton, and Bredon, are employed in feeding oxen of the best Herefordshire and Devonshire sorts, for the London markets. We likewise breed some of the best Gloucestershire hill sheep; we touched on the Leicestershire, but found them (though handsome), rather too small for our rich pasture. We feed what sheep we breed, for the London markets. Our other pastures are used, in general, in dairies; some of these are employed in making butter for the Birmingham markets, and a skim cheese they call two meals, or seconds; these sell for eight shillings per cwt. less than the one meal, or best making. The dairies that make best cheese, make no butter, but depend entirely on the cheese. Where they make the skim cheese, the land is deemed too rich for one meal, as it causes it to heave, and that produces a strong rank flavour.

We have no new made pastures; the old ones abound with honey suckle, yellow craisey, crested dogstall, perennial rye-grass, &c. Being an extensive parish, in some hamlets, where are few or no commons, our breeds are good; and we have a gentleman farmer, a Mr. COTHER, who has been crossing some well-bred wide horned cows with a Devonshire bull: I believe this is his second year; and what young cattle and calves I have seen, are very promising for size and beauty.

In other hamlets, there are commons for young cattle; these are usually overstocked, consequently the breeds of no note; nor will they be improved, unless the commons and fields are inclosed; we should then vie with our neighbours, in the best breeds; our meadows, rich from the washing of the manure and sheep-folds of Warwickshire, and the Vale of Evesham, would naturally enlarge the growth of our stock, and excite in us emulation in our breeds.

In one instance only, the water of the fold-yard is carried over a large field, evidently to great advantage. Our meadows are wonderfully enriched, and at the same time too frequently damaged, by the overflowing of the river Avon, which extends itself near six miles through this parish. We on the spot, conceive our meadows to be the first flooded, and to lie the longest under water, of any in this kingdom. Severn is our natural drain; but we want in wet seasons more sluices, or gates, or wares (which might be easily made), to conduct our overflow of water from Avon to Severn; could we be unanimous in the method of effecting it, the expence would be easy: nothing would improve this part of our country, or render us such essential service. Now I am noticing meadows, if ever an inclosure takes place, the meadows should be lotted, to lay property together, but not divided by fences.

Our land produces good crops of wheat, barley, beans, pease, clover, &c. as the seasons suit each or either.

The crops of turnips are in general very good, on those parts that suit the cultivation: we have lately practised hoeing, and find it add at least one-third to the value of the crop. We eat the greatest part off with sheep, and many are haled into the farm-yards for cattle; in wet seasons, our sheep tread the lands, owing to the deep loam and loose soil, to the prejudice of our barley crop. Notwithstanding this, we prefer the

sheep for this business, as it firms the land; besides this, it backens the mathon poppies, and other light weeds of that species, and prevents these light weeds from getting too powerful in the succeeding crops.

Our usage, or system, time immemorial, has been, three crops and a fallow; during the fallow year, the lands are a common pasture for sheep.

Nature has been so bountiful to us, we often put our manure immediately on the land from the fold-yard; but when we spare it from the arable for the pasture, we make dung-hills, which we seldom turn more than once; and when we clean our ditches and pools, mix the soil with it. We are not famous for mixens, nor do we use lime, which, in many parts of this country, is the first and best manure.

The ploughs and waggons that are made in our hamlets, are, as we here term it (out of the way things); but the first waggons in the world, are the Gloucestershire hill farmers' waggons: these are low and wide, calculated to carry large loads of grain in the straw, in a snug manner, at the same time they run so pleasant, that a jack-ass would draw a ton weight for miles, with ease.—JONES, of Withington, near Frog Mill, with many others, is noted for making them. The ploughs are natives, and such as are seen no where but in the Vale of Evesham. Speaking of myself, I am no experimental farmer, or possessed with any mechanical genius, I therefore use them as my father did before me; they are made with wood, except the share and coulter, very long in the tails, throck and shelve board, a load for a team; and though I own their aukward appearance, I have never had prudence to try other sorts, from an ill-grounded habit, or conceit, that no other plough would answer in our steep ridges, or turn its furrow so regular and true. Four horses at length, are our usual plough team; only one ox team; this is drawn at length, with open collars, and horse harness, and answers well.

Wheat is sown from the middle of October to the end of November, under furrow broad-cast, and trod in with men; on the clover sward we harrow it in; some little drilled. Beans are all set by line: we prefer setting them north and south, to have the benefit of the sun betwixt the rows; these are hoed three times, with the gardener's coming hoe; the large tick bean is used, and are set single by women, who have twenty-pence for setting nine gallons and a quart, the customary bushel; allowed a quart of cyder to each woman per day—good hands get from fourteen-pence to twenty-pence per day; produce, sufficient to satisfy the cultivator.

I have every reason to speak in praise of inclosures: about twenty years back, I obtained an act to inclose a parish in Gloucestershire, of strong clay lands; my allotment was about four hundred and fifty-three acres, which, in its uninclosed state, averaged about eight shillings per acre, and will now bring upwards of thirty shillings. We must allow some part of the increase to the times, but the improvement is greatly owing to its turning from indifferent arable to most excellent pasture. Before the inclosure, the cattle and sheep were infamous; they are now of the first quality. My zeal for inclosures has carried me from Worcestershire to Gloucestershire. I hope the digression will be excused. From my commencement of farming, I have converted five hundred acres and upwards, of arable land, into pasture, and greatly increased its value. I lay down with white honey suckle, only eight or ten pounds to an acre. All other

seeds,

seeds, except the trefoil, are injurious in these soils—six or eight pounds of milled trefoil to the acre. Trefoil assists for the first year only.

Very few inclosures have been made in this district of the county; but as we lie at the extreme southern part, we are intersected on all sides by Gloucestershire, where there have been various inclosures, some very near; and in general, where they have been completed fifteen or twenty years, property is trebled, the lands drained; and if the land has not been converted into pasture, the produce of grain very much increased; where converted to pasture, the stock of cattle and sheep wonderfully improved. Where there are large commons, advantages are innumerable, to population as well as cultivation, and instead of a horde of pilferers, you obtain a skilful race, as well of mechanics as other labourers.

Our inclosures on the hills are from forty to twenty acres; in the vale, from thirty to ten, with smaller closes about the homestead, for orchards, and other conveniencies.—About two years rent is usually allowed for inclosing large common fields.

Population is generally increased, as much in our inclosed parishes as our uninclosed: in our next parish, Kemerton, in Gloucestershire, it is evidently so, and many new houses built.

I observed before, five of our hamlets are common fields. An inclosure was proposed by the rector, about nineteen or twenty years since; his terms I approved, but many of our neighbours were violent in opposing it, and it dropped; since that time, the advowson and rectory have never been in the same hands, and the late and present rector, having only life interests, and otherwise not men of business, no plan or offer of the kind has been attempted.

Mr. KEYSALL, one of the partners in CHILD's house, has lately purchased the advowson. I hope he will see his interest, in inclosing one of the richest parishes in the county of Worcester; and here it may be proper to observe, that Cutsdean (one of our hamlets), was inclosed at the time I mentioned the attempt was made to inclose Bredon, and though situated on Cotswold Hills, near Stow, sixteen miles from hence, the living improved sixty pounds per annum for twenty-one years, viz. from forty pounds to one hundred pounds; and in three years time, will lett for two hundred pounds per annum; as the present lease expires.

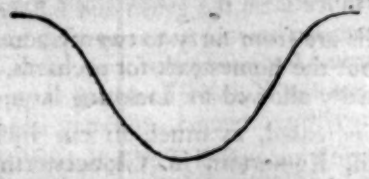
Our commons chiefly lie high; four hundred acres in extent. Would make excellent tillage, bear turnips, seeds, barley, wheat, feed good sheep, &c. if cultivated in the Gloucestershire hill husbandry (there the barren rocks are made almost as profitable as the best vale soil); another part would make excellent pasture; there are, besides, twenty acres of scar and rock, that would answer well in plantation, and greatly beautify the vale below it.

To men skilled in shepherding, and fothering our stalled oxen, we give from 11s. to 12s. per week; our carters, from 8s. to 10s.; the taskers, or threshers, mostly by the piece, earn from 8s. to 9s.; old men, and moderate hands, 6s. per week; mowing grass, 18d. per acre, with a gallon of beer, or best cyder; reaping wheat, from 5s. to 6s. per acre, with a gallon of beer, &c. women from 6d. to 7d. per day, no beer; mason and carpenters, 20d. Wages increasing. Harvest month we pay our labourers 56s. and beer, best hands.

In

In common fields, little nor no attention is paid to drains. The Severn is our main drain; the Avon the first conductor to it; our brooks and ditches leading to the Avon, change their owners as the lands vary: consequently the cleansing is not regularly attended to. Much draining has been done in inclosed fields; some in the open fields. We prefer the stone-drain; what was done formerly with wood, is entirely worn out, and in gravelly soil, it goes very soon indeed.

The most skilful drainer I know in Worcestershire, is the present Earl of COVENTRY: his part of the county was a morass, not half a century back, and is at this present time (though formerly a moorish, fœtid soil), perfectly dry, sound for sheep, and other cattle. He has but few under-drains. His principal drains are open formed, thus:



turfed to the bottom, so that cattle can graze without any loss of herbage; no water ever stands; and Croome is now noted for its dryness, as well as being well kept; and although the house is surrounded with fourteen hundred acres, under his own inspection, you do not see a tree, bush, or thistle growing upon it, undesigned or out of place. It may very justly be stiled a pattern farm to this kingdom, from its well-formed plantations, and its judicious and extensive drains. He has a beautiful breed of the Holderness, or Yorkshire cattle.

Paring and burning is little used, but where it is, no management equals it; the farmers on our hills are shy of acknowledging its benefits.

There is not much wood; the tenants, without restrictive covenants, in general, deface our neighbourhood in a hideous manner. Elm is the prevailing tree, in short, the weed of the country; it would grow to an immense size, if left unmolested, instead of which, they are cropped and lopped, either to find fuel for the merciless farmer, or stripped of their boughs to the top, to shew the young man's skill in climbing.

Our markets are well supplied, and very regular; the price of provisions bears a proportion with our tradesmen's bills; our labourers are well fed and provided for: without these are made comfortable, our lands would be of little value. The rise or fall of provisions depends on various circumstances.

The roads are in a very improving state—we border on perfection. We have a neighbour, Mr. MARTIN (member for Tewksbury), who has amply supplied us with advice, with large sums of money, and unremitted attention: by throwing in our mites, instead of being proverbially famed for bad roads round Bredon hill, we are now as much noted for good ones. Our method is, to form them like a half-barrel; in false ground we use wood or furze, large stone, then smaller stone, covered with gravel, thick enough to prevent the frost tearing the stone; this mode, with attention, gives a firm road. As I have before noted that good roads make good farmers, would it not be a proper proceeding in the Board of Agriculture, to petition Parliament, in its justice to take into

into due consideration the heavy fees of the House, in regard to road acts and inclosing bills, hoping it would not be beneath the dignity of that Honourable Assembly to moderate those fees, as in their wisdom they might judge fit?

We rather excel in our farm houses, which are chiefly situated in villages near the commom fields.

Leases are by no means general; but when a tenant takes a farm in our open field, he holds it by custom for four years; and there is the greatest reason why this custom should be lawful: three crops and a fallow conclude a round of four years, and as the odd marks vary in quantity, in four years, he has had crops of all the different grains, and gets his average. His entrance is on the green and fallows at Lady-day; being deprived of his crop the first year, he finishes the crop after his rent ceases. There are some leases on our inclosed farms, but none restrictive, as to trees. In MARSHALL's minutes on Gloucestershire, and the Vale of Evesham, I supplied him with a lease, I then conceived well drawn; it is there copied, and may be referred to.

Bredon is situated in the neighbourhood of Tewksbury, eminent for its stocking manufactory; of course we have from sixty to eighty frames employed in our different hamlets; these engage about one hundred hands; this certainly enlarges the poor's rate, which I balance by our having an excellent market at Tewksbury, as well for our large, as our small productions. This manufactory is in high credit, and I have lately heard some of the principal factors say, they could not supply their orders so fast as they received them.

We excel in nothing so much as setting beans; it is superior to drilling in its most perfect state. Our inclosed lands make cattle fat.

Mend the roads, and inclose the fields—these are the best means of improvement.—We are tolerably far north—shew us an advantage, and our eyes are open. We have an excellent example for perspicuity and attention, at the head of our county; and I have it from the best authority, that the late Judge PERROTT used frequently to say, that Lord COVENTRY had brought a million of money into Worcestershire, from his skilful exertions in making the roads through the county.

The breed of cattle and sheep are not sufficiently attended to, though we have amongst us most excellent, as well of sheep as cattle.

In the upper part of the county, near Lord FOLEY's and Sir EDWARD WINNINGTON's, particularly amongst their tenants, are as well-bred cows and oxen as the county of Hereford* can produce. Messrs. WHITCOMB of Orleton, NASH of Homcastle, PROSSER of Shelsley, HARRIS of Stamford, WALKER of Burton, HAYWOODS of Clifton, WEST of Hom Bridge, with many others, breed most excellent cattle. In the breed of sheep, Messrs. PENRICE of Sawford, WAKEMAN of Beckford, PARROTT and OLDACRE of Fladbury, GREESLEY of Salwarp, CHARLOTTE, BLUCK, and OSBORNE, of Elmly, RAYER of Cutsdean, ORSBORNE of Broadway, with many others, breed most useful, and excel in this district.

* Mr. LECHMERE will average more than thirty pounds each, for thirty oxen, all bred in Herefordshire, in this year's sale. Mr. WESKER's oxen, who averaged upwards of forty pounds each, for fourteen, in last December, were all Herefordshire bred; and I am now in possession of an ox, bred in that county, remarkably large, and well made. I purpose keeping till next December, when I will measurse and weigh, and perhaps take a drawing off; and if I should, will send it to Sir JOHN SINCLAIR, for the inspection of the Board.

To

To conclude, I have read with great pleasure, the PRESIDENT's Address to the Board of Agriculture, on the 29th of July, 1794. I credit all the positions therein stated, to their utmost extent. A speedy and general inclosure bill, would ripen all these schemes for the improvement of the country, as rapidly as could be wished for.

NUMBER III.

The following intelligent observations, by Mr. OLDAHER, of Fladbury, will be found to merit attention.

The soils near Fladbury are various, such as deep sand, light sand, gravel, loam, clay, a red marl, and by the sides of the Avon, and other rivers and brooks, are meadows of a loamy clay.

The lands in this neighbourhood are principally occupied by tenants; the uninclosed are in general small; the inclosed farms are mostly from sixty to one hundred and fifty acres, but there are some from two to five and six hundred acres each.

The fields of the uninclosed parishes have a certain quantity always in tillage, but the inclosed farms are employed sometimes in tillage, and sometimes in pasture, according to the judgment of the farmer, the nature of the soil, &c.

Red and white clover, and trefoil, are mostly cultivated in equal quantities, five pounds each to an acre, with about two pecks of rye-grass (the latter I have myself given up, till I find I am wrong, and use the other sorts). This mixture is used in the inclosed farms, where there is a small portion of old pasture, these seeds answering the end of hay or pasture, and enables the farmer to summer a considerable stock of cattle, sheep, &c. It is usual to let the land lay with it as long as it will bear much grass, which will be about two or three years;—if the land is not too poor, it is then broken up with the turf plough (more particularly described hereafter), and planted with beans or pease, after which it is sown with wheat at the second ploughing; then fallowed for barley, and down with seeds again. But where a farm has a sufficient quantity of meadow, and old pasture land, the tillage is generally divided into four equal parts; one part being, after a fallow, sown with barley, and the half of it is sown with red clover only, principally for tying off with horses upon the land, or eaten green in the stable. The first practice is a most excellent preparation for wheat upon clay lands; the other half of the barley piece is sown with beans, pease, or vetches, according to the soil, or necessity for more green food; as the eating of vetches upon the land is of infinite service to the following crop; so that the second crop may be clover, vetches, beans, or pease, or any one or more. These are followed by a wheat crop. The custom is, in this system of husbandry, to put all the manure on that part of the barley stubble

stubble that is not designed for clover and vetches, and ploughed in for beans or pease. Sheep are the principal stock raised in the neighbourhood: the Leicestershire sort are the most prevailing: I know of none that would answer better here.

Here is no land watered, except about eighty acres belonging to GEORGE PERROTT, Esq.; nor do I know much land capable of that improvement.

Wheat, beans, barley, pease, oats, and vetches, the latter principally for green-food, are the crops in general raised.

The uninclosed lands are cultivated differently, according to ancient custom, such as crop and fallow, namely, wheat every other year. This custom prevails only on poor land, which lies a great way from the fold-yard, so as to get no other assistance, except sheep penning. In some other fields, they get two crops and a fallow, namely, wheat, and then beans and fallow. The above custom is mostly practised on strong heavy lands; but the prevailing practice, almost generally, is three crops and a fallow; upon the latter follows barley for the first; beans, pease, vetches or red clover, for the second, and wheat for the third. Upon all light lands that will bear treading with sheep, turnips are cultivated in great perfection. Clover answers well upon all soils that are not very poor; and turnips have much improved the light lands.

I never yet saw a farm, clean and in good heart, unless summer fallowing was practised after every succession of crops.

The produce of the fold-yard is almost the only manure used in these parts. Lime is too dear to be generally used. I never saw much improvement from that article in this neighbourhood.

The distance from great towns is too great to get manure from, of course it is not much a practice to sell hay or straw; but great attention is paid to make the most of what the farm produces, into dung-hills, which is conveyed annually on the land, some farmers putting it on the fallows after Midsummer, and ploughing in at the second ploughing; others, upon the barley stubbles for beans, &c. The last practice I think the best.

The sort of plough used here, is the common strait heavy plough, without wheels, as is peculiar to the Vale of Evesham. Many other sorts have been introduced, but none found to answer. Six-inch wheeled carts, and three-inch wheeled waggons, like most other countries.

Horses are generally used; oxen sometimes, and drawn single, like horses; but I never knew a farmer in the Vale of Evesham, but what was tired of them after a few years practice.

Wheat is sown as early after the the first of October as the rains fall to make it wet enough; but if not sown till Christmas, I have frequently seen good crops. Beans and pease are planted the latter end of February, and beginning of March; barley in April; winter vetches the latter end of September; and summer vetches in March, April, and beginning of May, for a succession. I have always had the best crops from winter vetches. Harvest commences from the beginning to the twentieth of August; varied by the season, soil and climate.

The land is mostly inclosed. In regard to new inclosures, I have known farms not worth the old rent after an inclosure; and I have known others, nearly double the rent; but this must arise from the high or the low price they were lett at before the inclosure took place. It can hardly be said to have paid common interest for the expence attending it in this neighbourhood. Where a proprietor had several small farms, to save the expence of dividing into small pieces, and repairing a number of small old buildings, by turning the whole into one, he may perhaps find an advantage. How far such practices, which must tend to depopulate, and in a measure monopolize, are a national concern, I will not pretend to determine. In poor lands, when inclosed, the quality and quantity of corn will increase; but in good lands, the quality, when the fences are grown up, will not be so good, and the quantity no more. There is certainly a great opportunity to improve stock, in an inclosed farm, which cannot be the case in uninclosed fields and commons.

The size of the inclosures very various, proportioned to the size of the farm; most farmers wish to have their land divided into eight or ten parts, or more, according to the nature or difference of soils. The expence of first planting and fencing on each side the quicksets, will be about nine shillings the perch (of eight yards running); and the expence after, in cleaning, repairing fences, &c. will be about three shillings or four shillings more; but many farms have a sufficient quantity of materials, without buying, for post and rails, which will be a saving of their value. It is reckoned to take about five years rent to inclose a farm.

In the Vale of Evesham, and neighbourhood, the inclosures have very much decreased population, and every year will have still less occasion for labourers. This will be more the case, where the farms are converted from small into large ones; but where large commons and waste lands only have been inclosed, it must tend to increase population.

There are some few open fields in this neighbourhood, but I do not hear of any application to be made for dividing them.

The extent of waste lands is but trifling, and those are depastured with sheep, cows, or horses, a certain number to what is called a yard-land, which number varies according to an old custom: some parishes stock sixty sheep to a yard-land, and others perhaps forty; and where a farmer has not a proper quantity of each sort, one cow or horse is reckoned equal to three sheep; so that he stocks with either sheep or cattle, as is convenient to him.

The waste lands are capable of little improvement, as they are generally the poorest lands, that will not pay to till, but are almost the only support of the flocks of sheep, which the farmer keeps for the folding upon his common tilled land. This custom is an excellent manure for one crop, and is the only advantage made by keeping of sheep in this way. The commons might, many of them, be improved by draining, fencing, &c. as the lands generally lie low, and are much subject to rot in wet seasons. The poorest part of them are often covered with furze or thorns, which are useful in many respects. I remember to have seen an Act of Parliament that passed about twenty years ago, that empowered a certain majority of occupiers, in number and value, to oblige the minority to certain regulations for the term of six years, which Act I thought a very

very good one, and gave an opportunity of making considerable improvements in open fields, such as in draining, fencing, &c.

The rate of wages is by the day, twelve-pence and beer, or fourteen-pence and no beer;—the time of working from six till six, in summer; in the winter, as long as they can see to work. Corn is threshed by the bushel, namely, wheat at four-pence, barley about two-pence halfpenny, beans two-pence. Grass is cut at twenty-pence an acre, and six quarts of beer. Labour in hay-making is sixteen-pence or eighteen-pence, and beer. Harvest wages are thirty shillings and maintenance, or three pounds and beer. Instead of beer, I give five pecks of malt and one pound of hops, to each labourer.

Draining is not much practised in common land, but pretty much in inclosures: In clay soils, turf is used; in others, wood or stones, which is most convenient; the latter is most lasting.

Paring and burning is but little practised here, as there are but few old lands to break up, and there are but a few roots in new turf, to make ashes. If a farmer has a piece of strong turf, he generally plants it with beans or flax, at one ploughing, with a turf plough, a sort of plough that has two shares, one before and above the other: the first takes off about an inch of the turf, and turns it into the furrow after the horse; the next share, about eighteen inches behind, throws on the top of the turf a clean furrow of mould, about five inches thick; by the next year, the turf is sufficiently meliorated, and is then sown with wheat. This practice is preferred to paring and burning.

Here are some woods, which are regularly cut, in rotation, leaving young trees, for timber, at certain distances; but the exact practice I am not acquainted with.

The price of provisions here, is at present, beef at three-pence halfpenny per pound, mutton four-pence halfpenny, wheat seven shillings and six-pence (thirty-six quarts to the bushel), barley five shillings and ten-pence, beans six shillings. The measure varies in this neighbourhood considerably; it appears to me to have been caused originally by the quality of the produce of the country, one farmer wishing to sell for as much money as another. In the Vale of Evesham, and about the neighbourhood of Worcester, where the quality is fine, the measure used is thirty-six quarts; but on the Cotswold Hills, and all cold climates, such as parts of Herefordshire, Shropshire and Wales, it is thirty-eight or thirty-nine quarts, which extra measure hardly makes out for the deficiency in quality, especially in some wet seasons, it being late ripe on these cold lands, is thick skinned of course, and never dry, nor of a good colour.

I will here beg leave to give my opinion, that a general regulation by weight, would be much preferable to equalizing the measure, for several reasons; but a most principal one is, it would be a much fairer way to set an assize of bread from, than measure; for I know very well, that a bushel of wheat in Worcestershire, of the growth of 1791 or 1793, will make on the average, seven pound of dough, or six pound of bread, more than the produce of 1792. I am not able to say, whether provisions are likely to rise or fall.

The public roads are in pretty good order; but the private roads, in general, are much neglected. I know of no improvement in the making of roads, that has been lately found out.

The farm-houses and offices are not on a good construction; and the situation almost generally ill chosen, which is often attended with great loss to the occupier. Houses, &c. for feeding cattle in winter, should be encouraged, as such feeding adds greatly to the dung-hill, both in quantity and quality.

The leases commonly granted, are for twenty-one years; but many, according to the circumstances and opinion of the proprietors. Covenants ought, and generally do, restrict tenants from getting more than three crops without a clean summer's fallow. I do not see how the rotation of crops can be laid down in leases; for often, when a wheat or bean crop have failed in spring, from the grub or otherwise, I have seen spring crops put in successfully upon one ploughing. But the farmer should be confined to spend the whole produce on the premises; manage and depasture properly, and to leave the farm, at the expiration of his lease, in such a situation as will be a fair entrance to a succeeding occupier.

I have seen two farmers upon the same sort of soil, manage their land very differently, according to the custom of each county; yet both live well, and both get money.

The large farmers have certainly a turn to improvement: the small ones have not an opportunity; but there are fifty inventions introduced, and the sensible farmer unfortunately sees hardly one that will answer. Proprietors granting leases for a sufficient length of time, would tend to excite a spirit of improvement in the occupiers, not only in the tillage land, but in the grass land and planting. The latter practice I am sorry to see neglected; as in most farms there are some pieces, or placks, that might be fixed for some kind of plantation. The improvement of old quickset fences, I think the country more behind in, than in most others.

The improvement in stock, is rapidly increasing—I mean in the beast and sheep kind: the breed of horses (that most useful of all animals), leaves room for great improvement. If gentlemen of property would but keep stallions of the true useful sort, for their tenants and neighbours, paying for the same, the breed might be improved. I will not pretend to point out what sort would be more useful, only, that the clean legged, free from hair as much as possible, are easily kept clean, and are most healthy.

There is one inconvenience much against improvements in farms, where the old inclosures run very small, as from one to three or four acres each, intermixed, and the owners not inclined to accommodate each other, which I am very often sorry to see; but when they are disposed so to do, circumstances often occur to prevent it, such as part belonging to leasehold property, and part freehold. An Act of Parliament, appointing Commissioners for such purposes, in general might remedy it.

NUMBER IV.

OBSERVATIONS, BY MR. LUCAS, OF HANBURY, ON THE KEEPING OF LAND IN PERPETUAL TILLAGE.

THAT ruinous system of keeping land in a state of constant tillage, without any intermediate rest by pasturing, is but too common throughout the county of Worcester (making only a few exceptions). The disproportion of tillage converted into a temporary pasture for two or three years, in order to renovate and acquire fresh nutriment by the dung of sheep and other animals, is only from ten to twelve acres in one hundred;—whereas it ought, and should be, forty-five in one hundred, at least; but much better if it was fifty. The system pursued, is not the same in all parts of the county, but changes as the soil varies in different districts; yet all manifestly tending to the same destructive purposes (the impoverishment of the land). It is customary on the heavy soils, after a summer fallow, to sow wheat for a first crop;—the second crop, beans: the ensuing winter, after the beans, the land is prepared for barley; and on the third crop, of barley, seeds are sown, generally a mixture of clover and trefoil, but sometimes only red clover. The ensuing summer the seeds are mown for fodder, and sometimes, not unfrequently, they are mown a second time for seed. The Michaelmas following, being the fifth year from the fallow, the land is broken up, and wheat planted thereon; and so on progressively, for any number of years. The consequences of this system of husbandry is, the land becomes exhausted of its natural goodness; foul, impoverished, subject to all sorts of weeds, and a regular diminution of its value, in so great a degree, that supposing, for one instance, a farmer was put in possession of a certain quantity of land, in so high a state of cultivation as to produce from twenty-five to twenty-seven or twenty-eight bushels of wheat per acre, and so in proportion of barley, oats, beans, &c., and he was allowed to pursue the aforementioned plan of management for twenty years, there is not the least shadow of a doubt, but the produce of that land would be diminished at the end of the term, seven or eight bushels of wheat per acre, and so in proportion of all other grain. And again, look at this system of husbandry in another point of view—if a gentleman is a proprietor of an estate (tillage), occupied by a tenant of the beforementioned description, supposing him to be certain of quitting at the expiration of a limited time, the gentleman has the mortification to find his estate all in a state of tillage, impoverished, foul, exhausted of nutriment, diminished in value, and, to the succeeding tenant, incapable of any thing but a general fallow, and a total change in the system of agriculture. In short, very considerable allowances are frequently made, to induce a man to succeed such a miserable sloven and robber.

The real cause of all this mischief, to the land proprietor, to the community, and particularly to posterity, is a very general and obvious defect in the covenant between landlord and tenant, wherein the tenant is allowed almost an unlimited power of ploughing the tillage how he pleases, excepting a few flimsy restrictions, which generally con-

confine him to take but so many crops between fallow and fallow, entirely disregarding the most material part of the covenant, confining him to keep, and leave his estate in a good and proper state of cultivation, which can only be effected by what I have before pointed out. Perhaps some weak and futile arguments may be urged in favour of constant tillage; such as saying, the clover never makes its appearance after the first year, but dies away, and totally disappears: this, I acknowledge, is not unfrequently the case, when it is sown on the third or fourth crop from the fallow, choaked up with weeds on an impoverished soil. But what would be the case, if the land were fallowed and manured for a spring crop, barley, seeded down, and pastured for two years, if it was not convenient it should remain so three? There is not the least doubt, to an unprejudiced judge, it would answer well; and might by such means repeatedly pursued (with a little assistance from the landlord), resume a total change of appearance, and amply reward both, for their pains and perseverance.

This great improvement in the agriculture of the county, must begin with the nobility, gentry, and landholders in general, who alone have it in their power to put a stop to the beggary and impoverishment of their estates. There is every inducement, every spur, on the part of the land owner, to adopt such salutary and useful measures—their own interests, the interest of their posterity, and what should always be particularly noticed, the good of the community, which, in a series of years, will not fail to be considerably and very obviously benefited, by such steps being taken before it should grow worse. In my opinion, there cannot be a stronger proof of the utility of keeping an equal proportion of your tillage constantly pastured, than by looking at those who, by industry, good fortune, or otherwise, happen to occupy their own estates; there you will uniformly meet with an equal proportion of tillage converted into pasture land, grazed with sheep, enriching itself every year, evidently for the purpose of keeping it in a good and proper state of cultivation for themselves and posterity. In short, there is a countless number of reasons to be given in favour of such improvements as are before pointed out, in respect to the amount of tillage, by keeping an equal proportion constantly in a state of pasture; or at least, forty-five acres out of one hundred, and so in proportion of a much greater quantity, or a less.

What I have before said on the subject of tillage, is not from a cursory view of the country, or from any interested motive; but from long and continued observations, and repeated proofs of the inutility of such a ruinous plan; and an earnest desire of seeing a better system substituted in its stead.

NUMBER V.

RULES AND REGULATIONS FOR THE ESTABLISHMENT OF A SOCIETY TO BE CALLED THE VALE OF EVESHAM ROAD CLUB.

ARTICLE I.

THAT this Society shall commence on the first Thursday in September, 1792, and the members thereof consist of persons resident in the neighbourhood of Bredon Hill.

II. That the members shall dine together on the said first Thursday in September 1792, and in every succeeding month, at half past two o'clock, at the undermentioned places, in rotation, viz.

The first Thursday in		The first Thursday in	
September,	Crown in Evesham	March,	Swan in Tewkesbury.
October,	Angel in Pershore.	April,	White Hart in Winchcomb.
November,	Swan in Tewkesbury.	May,	Crown in Evesham.
December,	White Hart in Winchcomb.	June,	Angel in Pershore.
January,	Crown at Evesham.	July,	Swan in Tewkesbury.
February,	Angel in Pershore.	August,	White Hart in Winchcomb.

Dinner to be provided at half-a-crown per head, and half-a-crown for liquor, &c. so that the reckoning shall not exceed five shillings each, when the bill is called for, which will be always at six o'clock: any member not attending, to give notice to the landlord of the inn, one week before each meeting, or pay half-a-crown for dinner, which must be provided according to the number expected.

N.B. It is hoped, that the notice required from absenting members will appear necessary, and be cheerfully complied with, for the reason before given; but, although the meetings are proposed to be monthly, it is by no means required that any member should attend more frequently than may be perfectly convenient: there will be no penalty for non-attendance, and the only trouble to be incurred, will be a note to the landlord of the inn, that Mr. —— will not be present.

III. That any three or more members assembled as aforesaid, shall have full power to transact any business or affairs relating to this Society.

IV. That all who become members, shall accede to an agreement of the inhabitants of Beckford, Overbury, Kemerton and Bredon, entered into the 18th of September, 1788, in the following terms:

"We the undersigned inhabitants of Beckford, Overbury, Kemerton and Bredon, feeling very sensibly the inconvenience arising from the bad state of the roads in our neighbourhood, and wishing to act cordially and unitedly, in the best manner, for the improvement of the said roads, do declare, that it is our intention from this time, to exert our utmost influence, by advice and example, to put the laws relating thereto in strict execution; and for this purpose, we will be ready and willing to serve (at least in our turns), as Surveyors of the Roads in our respective parishes; and we strongly recommend to the parishioners to appoint such persons, as shall be most likely to execute the duties of that office, with regularity, impartiality, and diligence."

Signed, "William Wakeman, John Darke, James Martin, R. Speedman, John Parsons, Henry White, J. Biddle, Roger Parry, William Heekes, William Freeman, Thomas Gibbs, Charles Tidmarsh, John Bricknell, John Alcock, Isaac Nind.

"The above Subscribers give notice to all parishes adjacent, that if the repairs of their respective roads are not more seriously attended to than they have been (the Statute Labour for which, duly performed, will in a great measure be sufficient), they are determined to unite in indicting such defaulters."

That in order to excite the steady attention of the several members of this Society, to the improvement of the roads in their respective parishes, and diffuse a general knowledge of the plan and intent of this institution; these rules and regulations, together with the following advice to Surveyors, shall be printed on a large paper, in the most legible manner, and framed and fixed up in the hall or most frequented room, in the dwelling-house of each of the said members, as well as on the church doors, in the markets, and other places of public resort, in their neighbourhood.

ADVICE

ADVICE TO SURVEYORS OF THE HIGHWAYS, AND ALL PERSONS EMPLOYED IN FORMING OR REPAIRING THEM.

The public roads and highways in many parts of the counties of Gloucester and Worcester, having by long neglect, become founderous and unsafe for travelling, an Association for enforcing the due execution of the Road Laws, has been entered into by gentlemen residing in the neighbourhood of Bredon-Hill; who wish to draw the serious attention of Surveyors of the Highways, to an object of such importance, and animate them to a diligent and faithful discharge of their duty; and to such of them as are not well skilled in the most essential part of their office, the following easy directions are recommended (adapted to almost any soil or situation).

TO MAKE A GOOD DURABLE ROAD.

The intended road being laid out, the surface of the natural soil should not be reduced to a dead level, but left rounded from the trenches that are made to carry off the water; it should then be laid with small brushwood (such as is cut from the hedges), the twigs lying crosswise the road, or with furze, or both mixed, and upon that the stones, placing the largest at the bottom, and decreasing in size to the gravel, or whatever small materials you have for the last finish to the covering.

N. B. No stone should be used for making or repairing the roads, but such as has been exposed to the air for twelve months at least; as when first taken out of the quarry, it is soft and mouldering.

*** Small stones, which lie in great quantities on some parts of Bredon and other hills, are excellent materials, and might be collected and laid in heaps at a reasonable expence, for the use of the highways.

It is also most earnestly recommended to the consideration of such Surveyors, that no road can be well prepared to receive the materials, nor preserved in a good state afterwards, unless the hedges and ditches by the sides thereof, are properly cut and opened, at the usual seasons directed by Act of Parliament for that purpose; and convenient drains laid in proper situations, for diverting any stream or watercourse that might be injurious thereto; and also that unless a sufficient foundation of furze and green brushwood, as abovementioned, be laid under the stones, gravel or other materials, the expence and labour will in a great measure be thrown away, and in no degree answer the intended purpose of public utility and advantage.

Every person (of any observation) must be sensible that the beauty of the country is very considerably defaced by the lopping and pollarding of trees, growing by the sides of highways; and it has been found by experience, that the object of preserving the roads by such practice, is not obtained; the obstruction of the sun and wind arising chiefly, if not altogether, from the hedges being uncut, and often placed upon high banks, which prevent both heat and air from having that good effect which would naturally proceed from them without these hinderances: on the contrary, trees do actually defend the highways from rain in summer; and in winter they can be of little or no prejudice, being deprived of their leaves during the whole of that season: these considerations are also most earnestly recommended to the attention of all concerned in the making or repairing of roads.

It is very evident, that roads are materially damaged by the over-loading of narrow-wheeled carriages contrary to law; and the general Turnpike Act expressly declares, "That no waggon, or other four-wheeled carriage, having the fellies of the wheels of less breadth than six inches, shall pass on any turnpike road with more than four horses; nor any cart, or other two-wheeled carriage, having the fellies of the wheels of less breadth than six inches, shall pass on any turnpike road with more than three horses; on pain that the owner of every such carriage shall forfeit five pounds, and the driver (not being the owner), twenty shillings, to any person who shall sue for the same." But however punctually the laws relating to the highways may be observed and enforced, it may be further remarked, that a constant and unremitting attention is requisite, for the due ordering and preservation of the roads; and, that all Surveyors should be careful to cause all obstructions and nuisances to be removed, the ruts and quarters filled and levelled, and occasional supplies of stone and gravel laid thereon, in such manner as to render the surface of the roads smooth, regular and easy, (the neglect of which has been found extremely prejudicial and inconvenient): it might therefore be very proper, that each parish should leave a sufficient number of labourers for that particular work; and that each of those labourers should be appointed to take care of a certain portion or extent of road, and to keep the part allotted to him in perfect order: such management would effectually preserve the roads, and prevent the necessity of more expensive repairs, which must otherwise be frequently wanting.

If the method prescribed by the general Road Act, of the 13 Geo. 3. for the stating and settling of Surveyors' accounts, was more strictly observed, instead of the manner too generally adopted, of passing those accounts, without any previous examination, at the special sessions held annually for the highways, when (by reason of the short time allotted for the business of that meeting) it is impossible for the magistrates to enter into a thorough investigation of such accounts; it might have a very serviceable effect upon the conduct of Surveyors, by compelling them to a more punctual and regular performance of so necessary a part of their duty: it is therefore to be wished, that the magistrates who attend at such special sessions, would resolve in future, that all Surveyors shall render a full and particular account, as well of all work and duty performed by teams and labourers; as also of all assessments, compositions, and sums of money by them received and expended, for the amendment and preservation of

of the highways within their respective parishes; and that no such accounts be passed at such special sessions, unless it shall appear to have been previously produced at a public meeting of the inhabitants (testified by the signatures of at least two of them), and afterwards examined and allowed by a proper magistrate, according to the directions of the beforementioned Act of Parliament: and, in order that all the Surveyors may have due notice of such resolutions, it is proposed, that the same be inserted in the instructions subjoined to their warrants of appointment. It may be reasonably presumed, that the Legislature intended the Surveyors' accounts should be examined by the nearest magistrate, who, from his own observation, or from local evidence, might be able to judge in what manner the duty had been performed.

The gentlemen of the Association wish to have it thoroughly understood, that as they are absolutely determined to exert their utmost power and influence, in putting the laws respecting the highways into execution, and enforcing the same; so they will be willing, ready, and happy, to give every friendly assistance and encouragement, to such as shall conform to their duty in this matter, which is so essential to the comfort and advantage of the neighbourhood.

It is much to be desired that no person will become Members of this Society, who are not really and earnestly disposed to act up to the spirit of its institution, and to embrace every opportunity of promoting its object, which is the improvement of the roads in their respective parishes particularly, and in the neighbourhood in general: to impress this object more forcibly, the following very pertinent observations are extracted from a charge delivered to the Grand Jury, at a quarter-sessions for the county of Worcester.

"Bad Roads are the only blemish and disgrace of this our country; happy beyond every other in the kingdom, in its situation, soil, variety, and plenty of produce, which extends to every necessary of life: who are we, in respect to our highways, behind-hand with almost all our borderers? let us vindicate ourselves from the reproaches of every traveller; not for his sake alone, but our own; for not to mention the loss that all our trade, commerce, and husbandry sustain from the badness of our roads, it deprives the country of its social pleasures and connexions; you too well know that in the winter, when the chearless season of the year invites, and requires, society and good fellowship, the intercourse of neighbours, few miles distant from each other, cannot be kept up, without imminent danger of their limbs or lives: in general, your Surveyors are negligent of their duties to a shameful degree: they throw the blame on the remissness of the individuals in their district: wherever the fault lies, the fact of inattention is certain; and an evil to which we ought, all of us, endeavour to apply a remedy as far as we are able; by duly enforcing the present laws for the amendment of the highways, until it shall please the wisdom of Parliament to furnish us with better."

THE END.